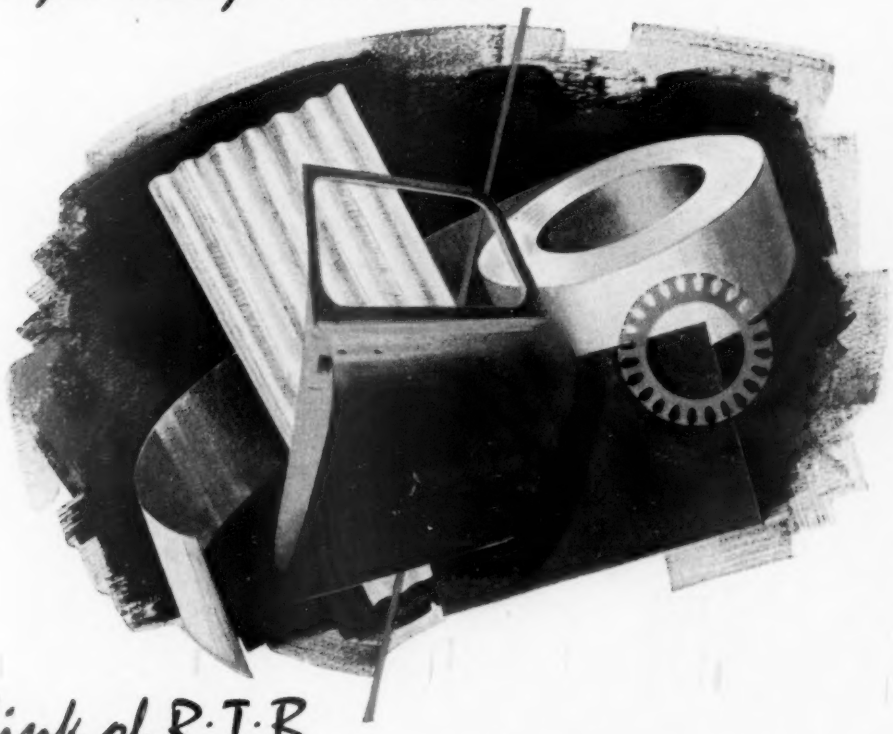
THE
RAILWAY GAZETTE

Price: Two Shillings | FRIDAY, SEPTEMBER 1, 1961 | Annually £5 by post

When you study PRODUCTION

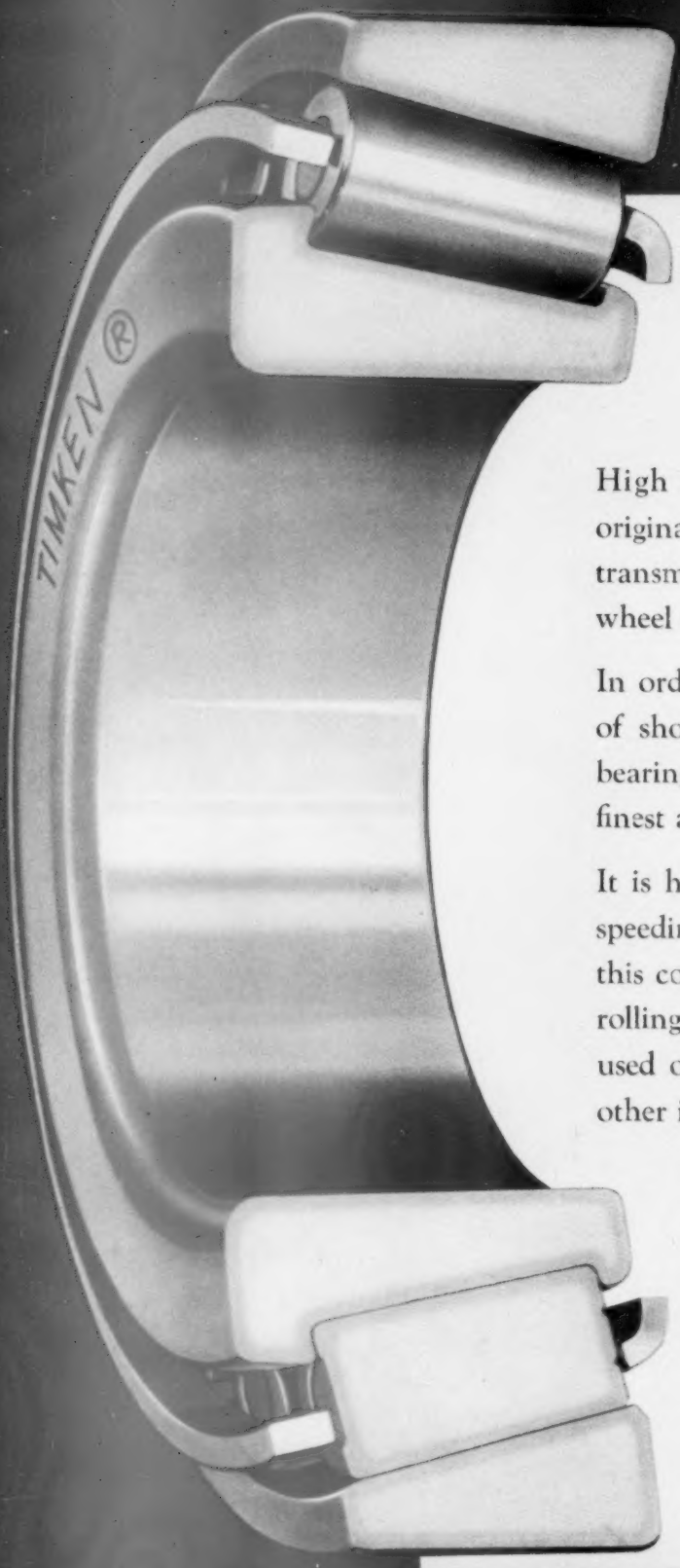


think of R·T·B

The artist's fantasy reminds us of the importance of the product of the steel strip mills we pioneered. It also suggests flat and corrugated sheets and the laminations ever present in modern electrical products.

There is hardly a branch of industry that has not felt the benefit of our products.
RTB tinplate and sheet steel are of course world famous—equally vital to some industries are special heavily-coated sheets, continuous steel strip, and electrical laminations. For these—of which we are the largest manufacturers in Europe—we have evolved new high-efficiency steels, which we make and then roll down into strips and sheets, to be stamped into laminations for every branch of the electrical industry.

Richard Thomas & Baldwins Ltd. R·T·B



Resisting SHOCKS

High speed intensifies the shock loads originating at rail level, loads which are transmitted directly to the bearings on the wheel sets.

In order to safeguard against the millions of shocks imposed during the life of the bearings, Timken bearings are made of the finest alloy steel.

It is highly significant that in the greatest speeding-up operation ever organized in this country—the modernization of freight rolling stock—Timken bearings have been used on a vast scale, as well as on many other important projects.

British Timken, Duston, Northampton, Division of The Timken Roller Bearing Company. Timken bearings manufactured in England, Australia, Brazil, Canada, France and U.S.A.

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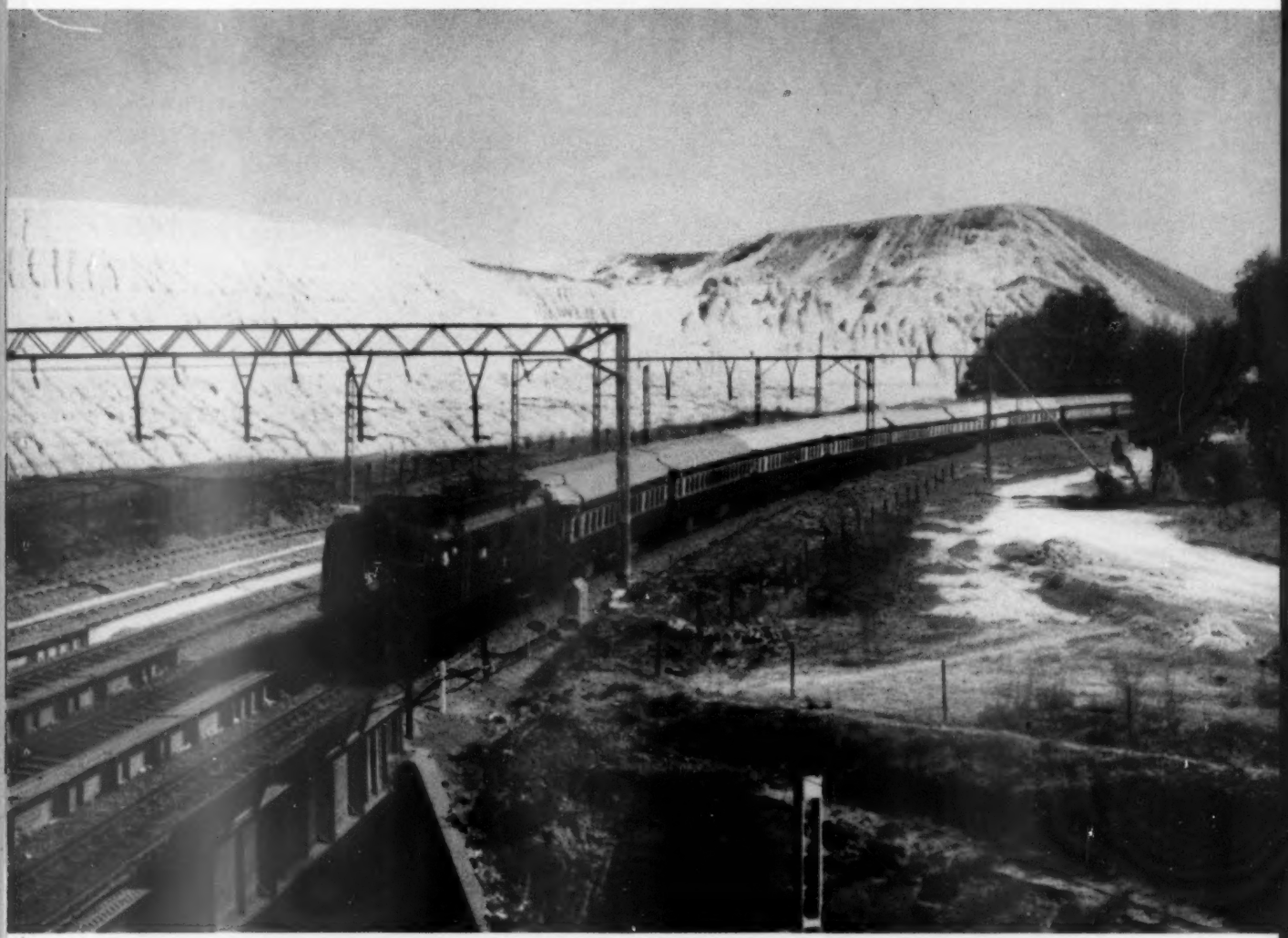
tapered roller bearings

Famous Trains

SOUTH AFRICA

air conditioned by **STONE-CARRIER**



S.A.R. BLUE TRAIN

Introduced in June 1939, this train runs twice a week each way in summer and once a week in winter between Cape Town and Johannesburg, a distance of 956 miles, at an average speed of 38 m.p.h., during which it climbs from sea level to 5735 ft. An electric locomotive hauls the south bound train out of Johannesburg on its way to Welverdiend, where a steam locomotive takes over for the main part of the run.

STONE PLATT GROUP

J. STONE & COMPANY (DEPTFORD) LTD

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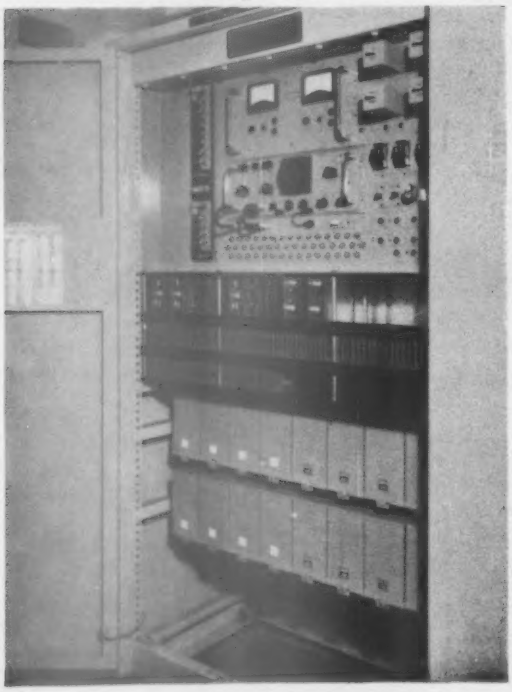
New control desk at Broxbourne

Resignalling for A.C. electrification on Eastern Region of British Railways covering approximately 110 track miles

WESTINGHOUSE

Westronic remote control equipment in self-contained cubicle at Harlow Mill Signal Box



SIGNALLING

INSTALLED THROUGHOUT

Covering the supply and installation of electro-mechanical, all-electric, and electro-mechanical panel type equipments (Hybrid), together with 183 new searchlight type running signals, 826 track circuits, etc.

Remote control of Clapton Junction from Hackney Downs signal box and Harlow Town Station layout from Harlow Mill signal box has been effected by the "Westronic" high-speed system.

Many thousands of plug-in relays have been used throughout the installation, many of them of the latest miniature type.

Signalling supplied and installed by :–

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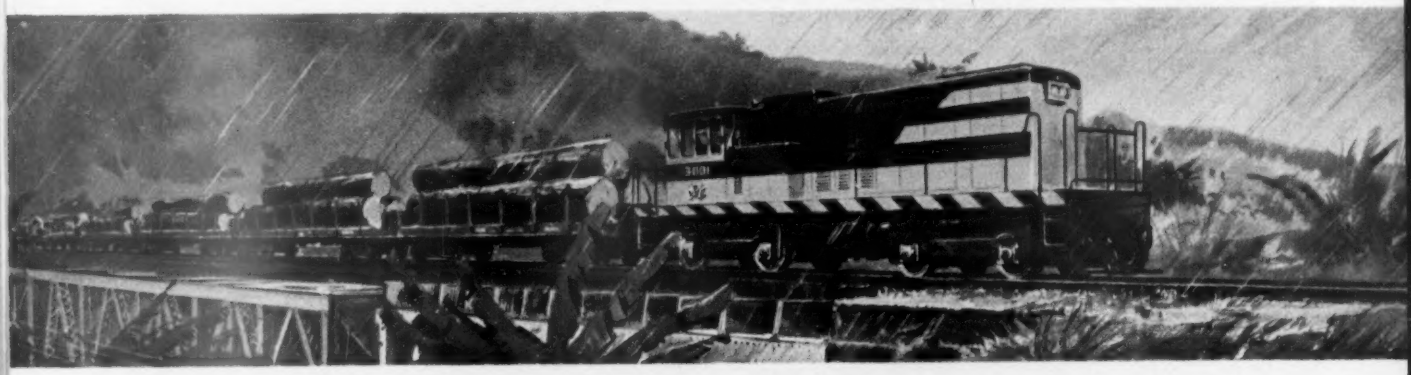
McKenzie & Holland (Australia) Pty. Ltd., Melbourne.
Saxby & Farmer (India) Private Ltd., Calcutta.
Westinghouse Brake & Signal Co. S.A. (Pty.) Ltd., Johannesburg.
Agents – Bellamy and Lambie, Johannesburg.

IN HIGH-SPEED PASSENGER SERVICE, 30 General Electric diesel-electric road locomotives, delivered to the Manila Railway in 1955-56, have averaged 90.4% availability during 13,545,930 kilometers of service.



IN RUGGED SWITCHING AND LIGHT ROAD SERVICE, 10 52-ton General Electric diesel-electric locomotives have averaged 96.8% availability in 2,800,566 kilometers of operation during the past five years.

40 G-E Locomotives Average Over 90% Availability

MANILA RAILROAD ORDERS 10 ADDITIONAL DIESEL-ELECTRICS. Outstanding performance records have been achieved by 40 General Electric diesel-electric locomotives during the past five years on the Manila Railroad, the most highly dieselized system in the Far East. To increase the Railroad's efficiency even more, 10 additional G-E universal locomotives (bottom illustration) rated at 700 hp and 60 tons have been ordered for freight service, as well as for switching and passenger use. The versatility and economy of G-E diesel-electrics for *all* types of railway operations have been profitably demonstrated on rail systems throughout the world. Specify General Electric . . . *Pioneer in motive power for over half a century.*

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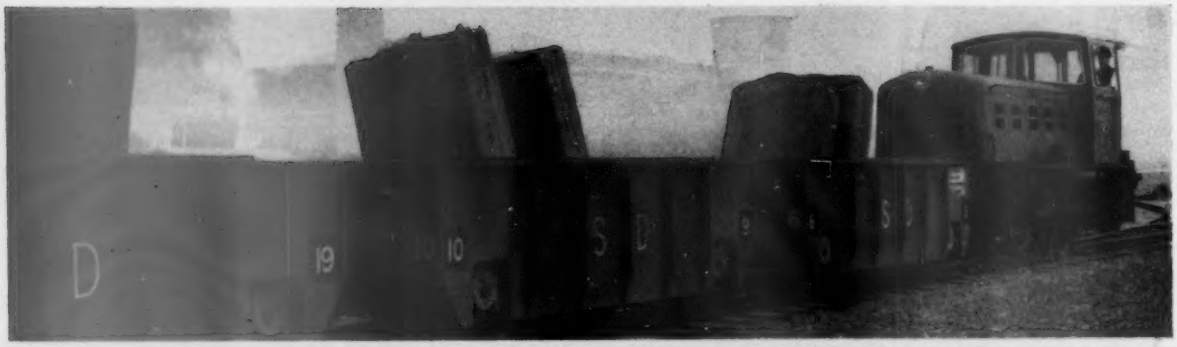

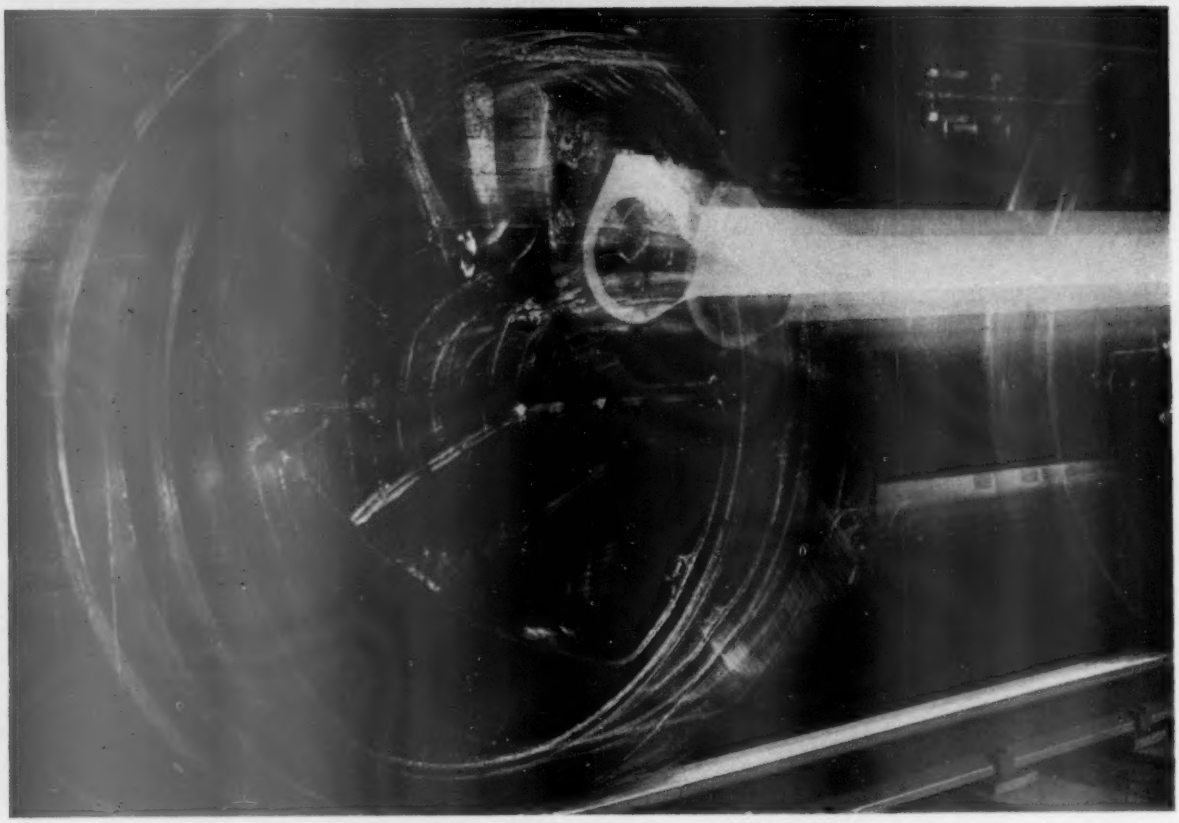

Hot steel is not to be trifled with. That's why Fowler diesel locomotives have been chosen again by the South Durham Steel and Iron Co. to serve their vast new plant at Greatham near West Hartlepool. Strictly-timed steel-making processes with associated handling problems similarly closely-controlled demand locomotives with immediate availability, high tractive effort and modest maintenance needs. These requirements, and more, are met by the Fowler diesels at Greatham working 24 hours a day.

FOWLER

means faster handling

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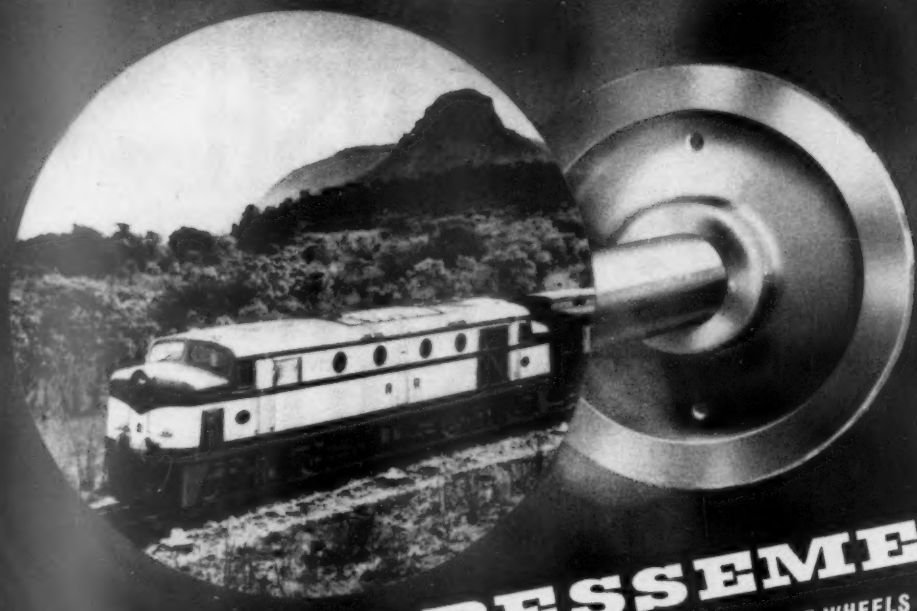

One of thirty-five 2,000-h.p. main-line diesel-electric locomotives supplied to the Rhodesian Railways by The English Electric Company Limited.

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TYRES · AXLES · SOLID WHEELS · DISC CENTRES · ASSEMBLED PAIRS OF WHEELS & AXLES

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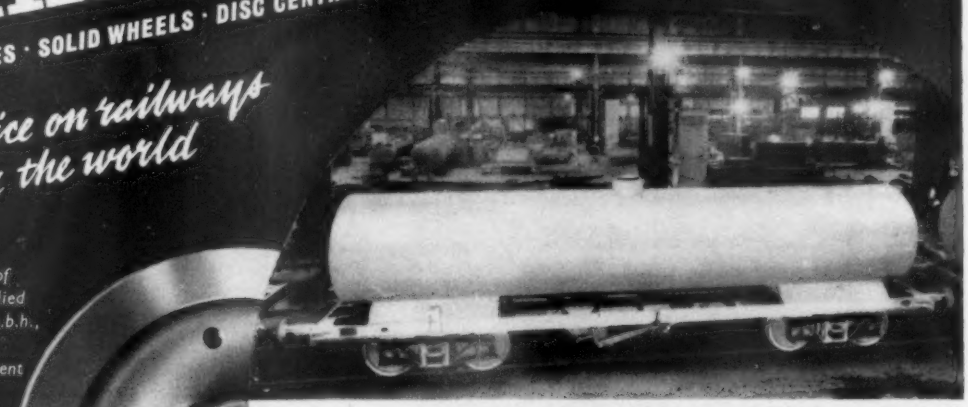
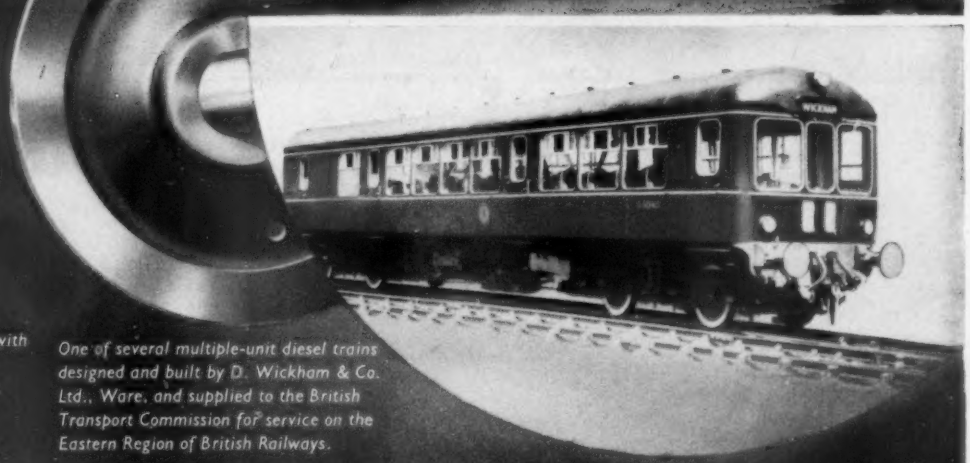


One of a number of tank wagons supplied by Rax-Werk G.m.b.h., Austria, to the Pakistan Government Railways.

B B



All the vehicles shown are fitted with Baker-Bessemer wheels and axles.

One of several multiple-unit diesel trains designed and built by D. Wickham & Co. Ltd., Ware, and supplied to the British Transport Commission for service on the Eastern Region of British Railways.

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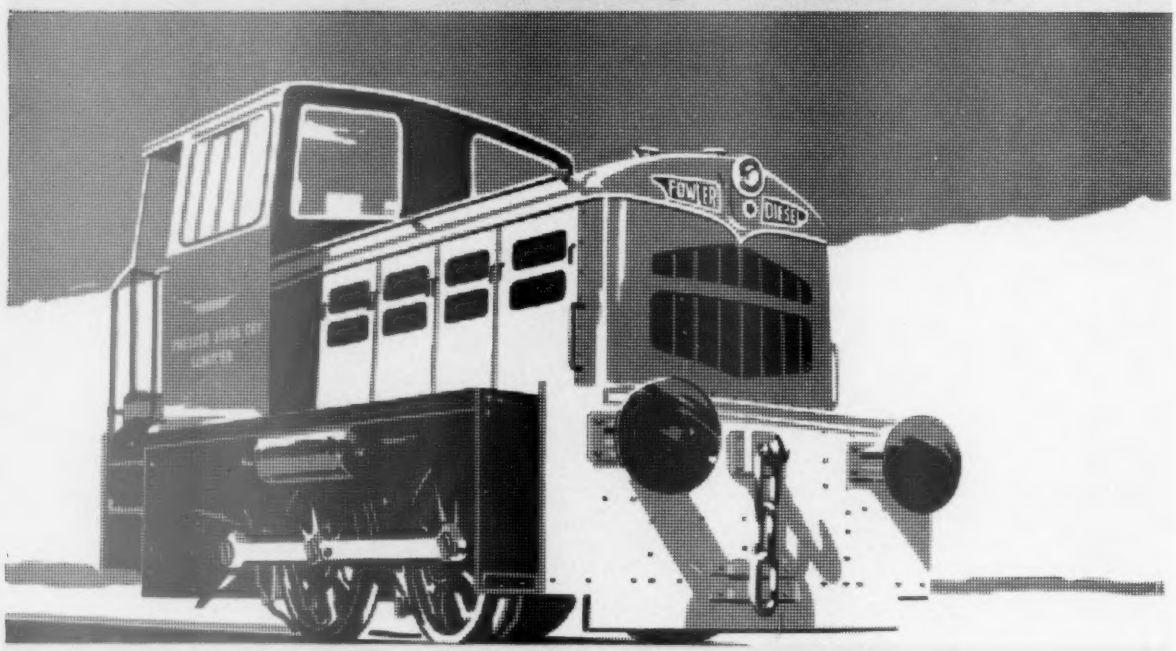
BRITISH UNITED TRACTION...



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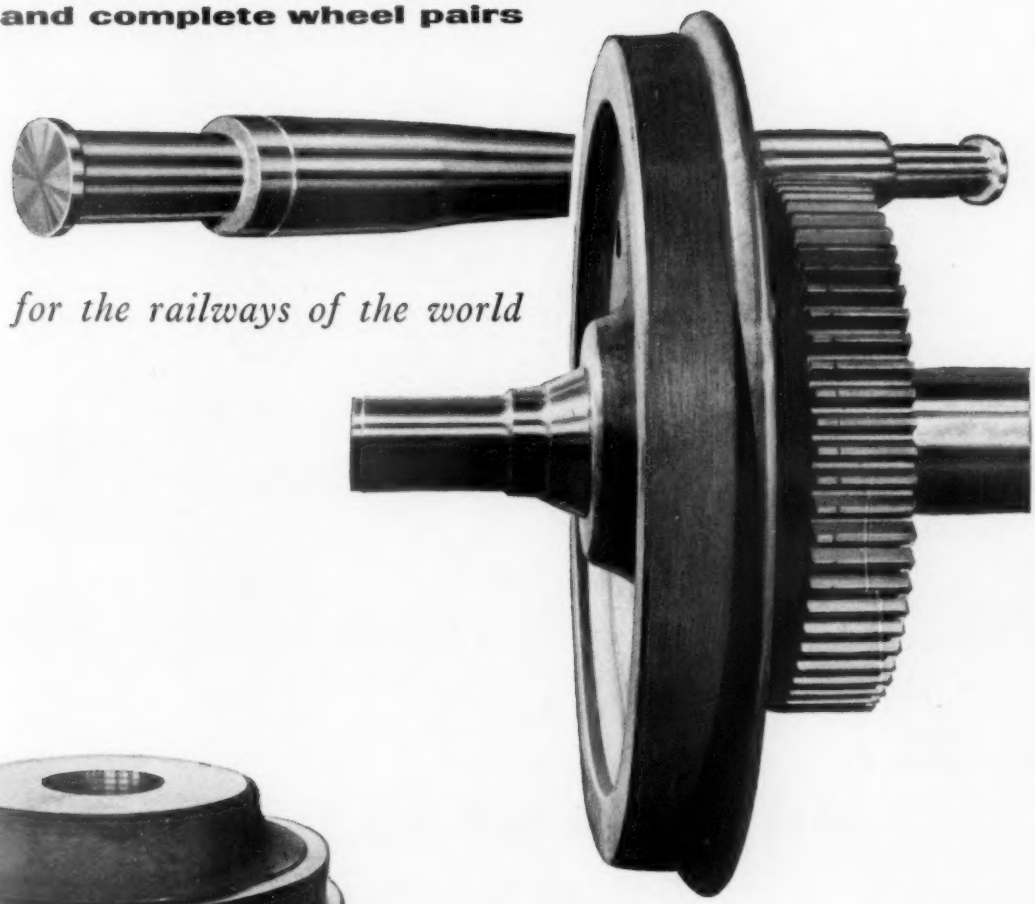

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Seamless Rings in Carbon and Alloy Steels. Flanges of all types. Gear Rings and other rings with square, rectangular or profiled cross section, from 6 in. (minimum weight 70 lbs.) to 78 in. inside diameter and from 2 to 12 in. axial width. Circular Die Forgings, maximum weight 2,000 lbs.—plain or punched slabs and special shaped forgings up to 40 in. diameter.

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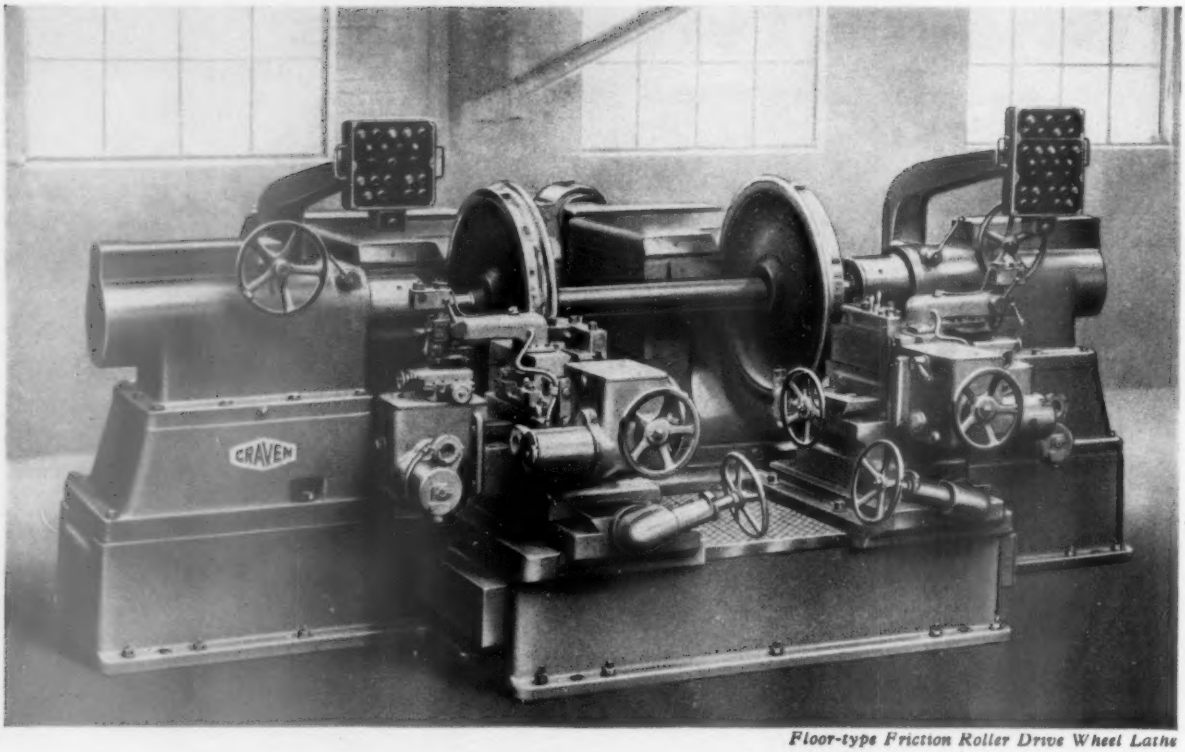

Floor-type Friction Roller Drive Wheel Lathe

FLOOR-TYPE AND PIT-TYPE

WHEEL LATHES

WITH FRICTION ROLLER DRIVE AND ELECTRICAL PROFILING

Recent developments in Craven Railway Wheel Lathes utilise carbide tools for re-turning diesel and electric traction wheels. The floor-type lathe deals with dismantled wheel sets, either with or without their axleboxes in position: the pit-type lathe re-turns wheel sets in position on the vehicle. The drive is by two pairs of hydraulically-loaded friction rollers—one pair to each wheel—giving a balanced, self-contained thrust upon the wheel rims to transmit a high driving torque without risk of distortion. Tread and flange form profiling is by Craven patent fully-automatic, single-point electrical profile copying equipment.

Patent Nos. 849291 & 833326,
and application No. 29749/59.

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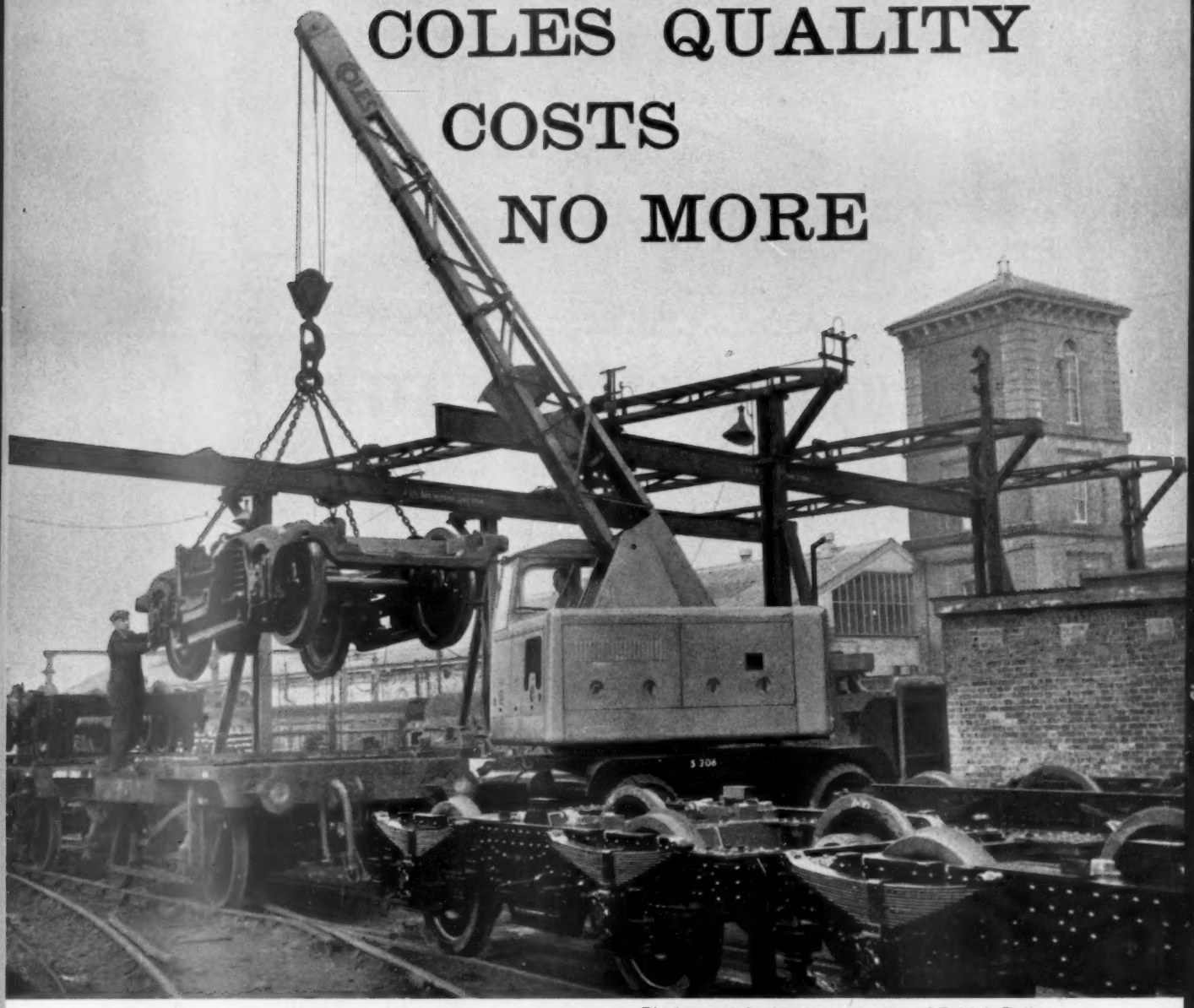

Photograph by kind permission of British Railways.

Quality usually implies extra cost. **Usually** . . . but not always. For, sometimes, by a rare combination of constructional know-how and shrewd factory organisation a product is turned out which not only stands pre-eminent in its field but **also** sells at a keenly competitive price.

Such a product is the Coles mobile crane. Acknowledged to be supreme in its class — more Coles are now in use than any other make — the Coles has built up a proud reputation for smooth diesel-electric efficiency. Fast-travelling, full slewing, it possesses a remarkable capacity for prolonged heavy duty under the most arduous conditions — and yet, we repeat, **Coles cost no more.**

COLES CRANES

THE NAME THAT CARRIES WEIGHT

Coles Cranes is a Registered Trade Mark

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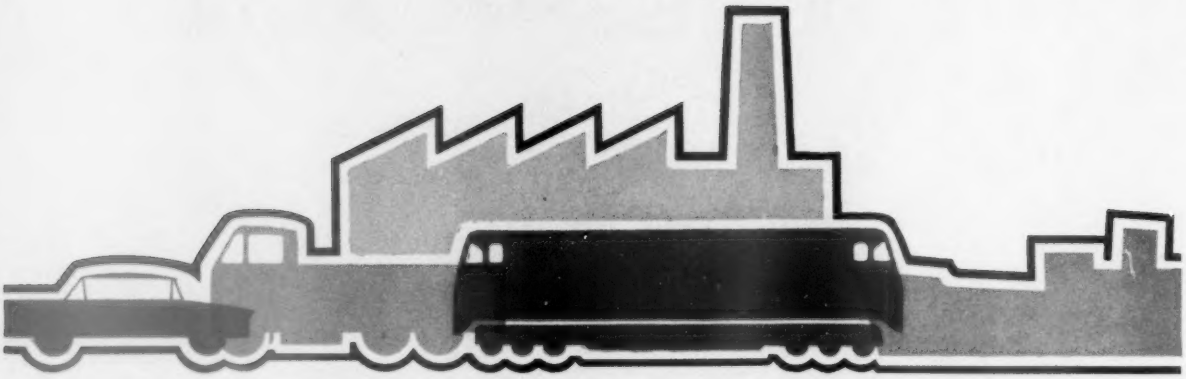


VOKES LUBRICATING OIL FILTERS

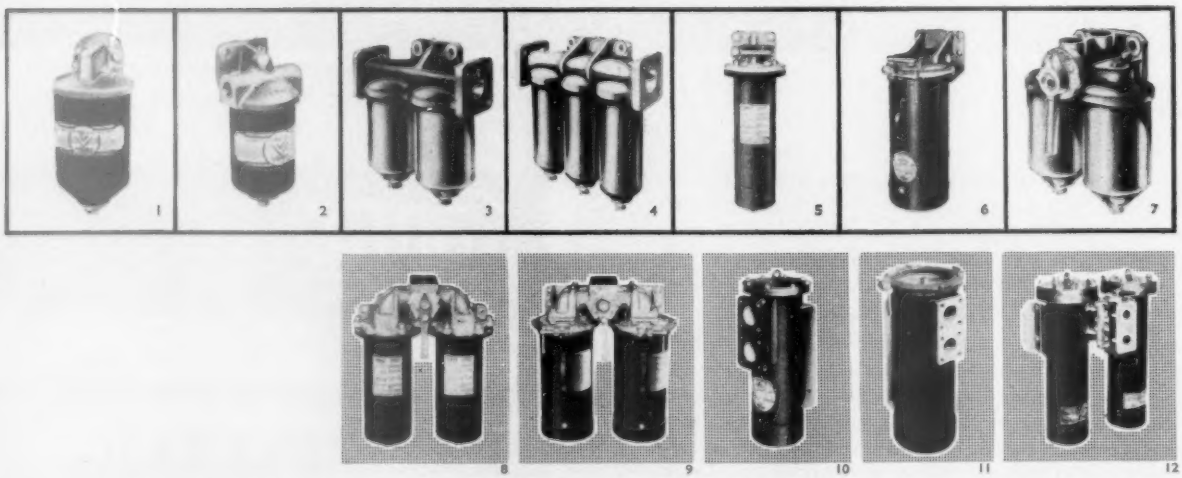
for complete engine protection

Vokes, a wholly British company and specialists for over 30 years in the design and manufacture of high performance filtration equipment, have during this time supplied full-flow lubricating oil filters to the Admiralty, mercantile marine and aircraft industries, and all major engine manufacturers. The easy maintenance and outstanding performance of these filters has now led to their adoption in several nuclear energy projects.

Illustrated below is the standard range of Vokes lube oil filters, made and guaranteed by Vokes for the complete protection of modern bearings and gear boxes. They are inexpensive on first cost, simple to install and the most economical in use. Each filter incorporates Vokes unique by-pass device which ensures a continuous flow of oil should the insert become choked. Other filters are available for special duties and Vokes engineers are always on hand to discuss your particular requirements.

Please write for Section B, Vokes new lubricating oil filter catalogue.

(1) Direct mounting type. Nominal capacities 200 to 700 g.p.h. (2) External pipe type. Nominal capacities 200 to 700 g.p.h. (3) Twin bowl, parallel flow. Nominal capacities 900 and 1200 g.p.h. (4) Triple bowl, parallel flow. Nominal capacities 1200 and 1600 g.p.h. (5) Multibolt head. Nominal capacities 750 to 2000 g.p.h. (6) Single bolt head clamping. Nominal capacities 3000 to 5000 g.p.h. (7) Duplex type, centre bolt fixing. Nominal capacities 200 to 700 g.p.h. (8) Duplex type, multibolt head. Nominal capacities 750 to 2000 g.p.h. (9) Duplex type, articulated clamp head fixing. Nominal capacities 3000 to 5000 g.p.h. (10) "Top Servicing" bolted head plate. Nominal capacities 1000 to 5000 g.p.h. (11) "Top Servicing" articulated clamp. Nominal capacities 3000 to 5000 g.p.h. (12) Duplex "Top Servicing". Nominal capacities 1000 to 5000 g.p.h.



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ELECTRO-HYDRAULIC FLANGING PRESSES
50 TO 1200 TONS

- LONG HYDRAULIC STROKE
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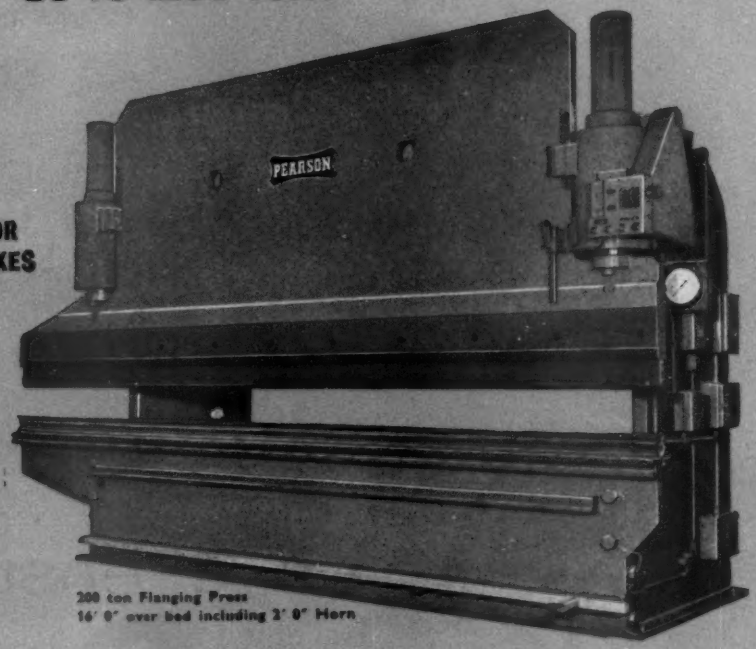

200 ton Flanging Press
16' 0" over bed including 2' 0" Horn

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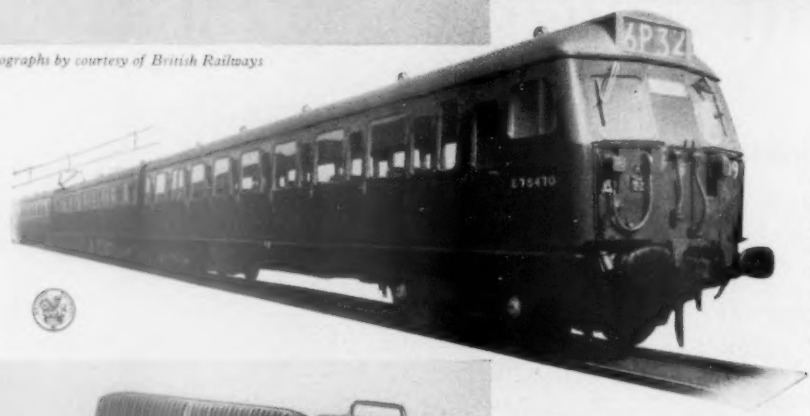
NEW STANDARDS IN COMMUTER COMFORT

Photographs by courtesy of British Railways



British Railways are certainly looking after their customers on this fully electrified high voltage service. Bintex Super Foam latex is used exclusively for the cushions on all passenger seats, adding Comfort with a capital C — Bintex Comfort — to fast transportation. Firm supporting resilience for shake-free newspaper reading *plus* luxurious softness for work-wearied limbs.

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LATEX SEATING

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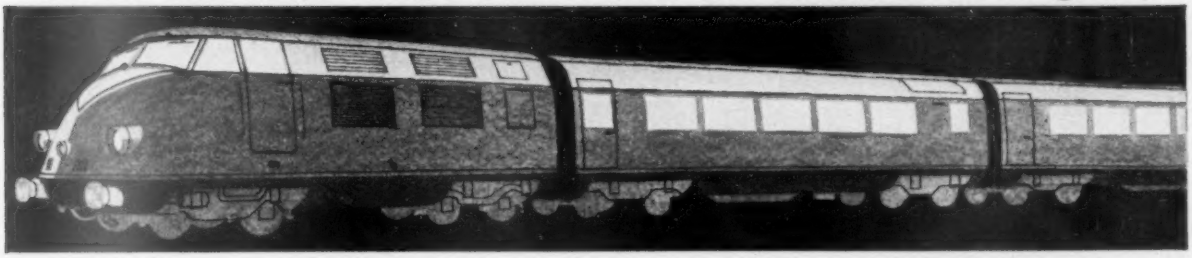
Now ...**TRIPLEX** Toughened Glass for tomorrow's rolling stock



For many years now, Triplex glass has been a familiar and reassuring feature to millions of motorists. Now Triplex Toughened Glass joins Triplex Laminated Glass in the industrial field. It is available now to the designers and manufacturers of railway carriages and other rolling stock. If you have any technical problems or special requirements concerning safety glass, write to us.

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MADE IN ENGLAND

Extract from article in The Railway Gazette, June, 16th, 1961.

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METCALFE-OERLIKON

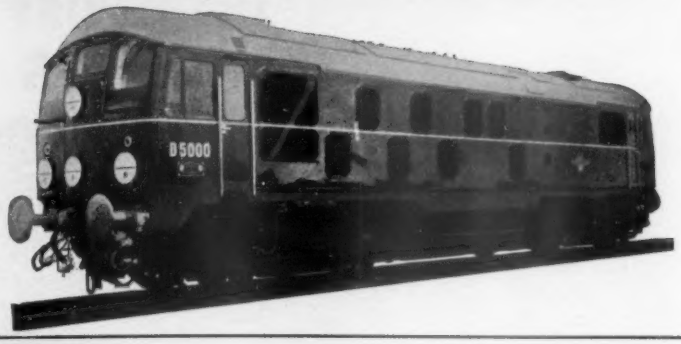
MODERN BRAKE EQUIPMENT

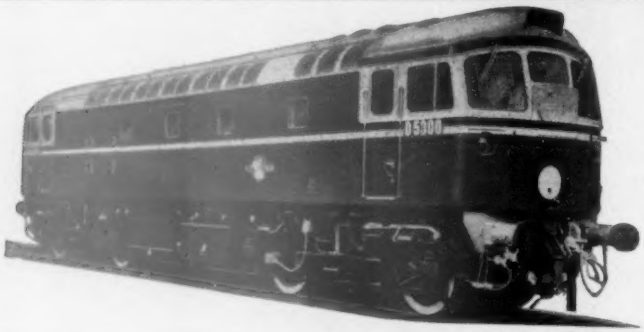
1160 H.P. Type '2' Diesel-Electric Locomotives.

Built by the Derby, Crewe and Darlington works of the B.T.C.

176 of these locomotives are to be supplied with Sulzer Engines and Power Equipment by A.E.I. Traction Division.

Metcalfe-Oerlikon brakes are also fitted.





1160 H.P. Type '2' Diesel-Electric Locomotives.

Built by the Birmingham Railway Company & Wagon Co. Limited.

47 of these locomotives have Sulzer Engines and Crompton Parkinson Power Equipment.

Metcalfe-Oerlikon brakes are also fitted.

1100 H.P. Type '2' Diesel-Electric Locomotives.

Built by the North British Locomotive Company Ltd.

They have N.B.L./M.A.N. Diesel Engines and General Electric Company Power Equipment.

Metcalfe-Oerlikon brakes are also fitted to **38** of these.

The above are just three of the many types of Main Line Diesel-Electric Locomotives now in service with British Railways and all are equipped with 'Metcalfe-Oerlikon' patent Vacuum Controlled Air Brake Equipment.

Undiminishing Performance
Light Weight
Friction Free Valves
Reduced Maintenance
Easy Installation

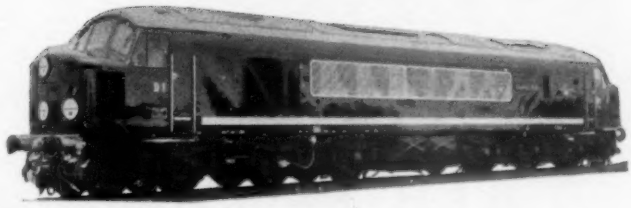
Suppliers to the World's Railways since 1870

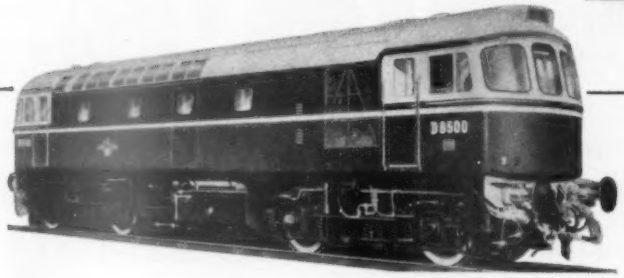
DAVIES & METCALFE LIMITED

METCALFE-OERLIKON

MODERN BRAKE EQUIPMENT

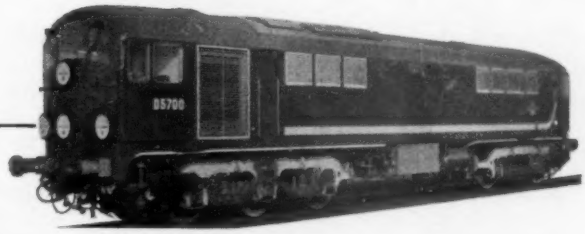
10 – 2300 H.P. Type '4' Diesel-Electric Locomotives. Built by the Derby Works of the B.T.C. and fitted with Sulzer Engines and Crompton Parkinson Electrical Equipment. 10 of these Locomotives are in service with British Railways and a further **137** are now building.

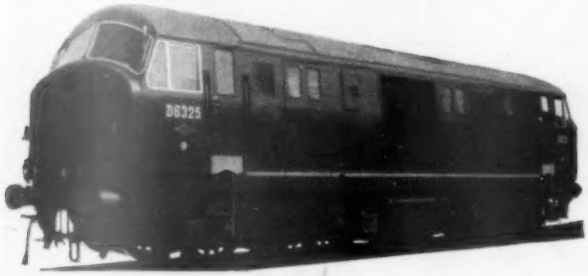




1550 H.P. Type '3' Diesel-Electric Locomotives. Built by the Birmingham Railway Carriage & Wagon Co., Ltd. and fitted with Sulzer Engines and Crompton Parkinson Electrical Equipment. **98** of these Locomotives are to be supplied, and these are arranged for working with either 'Vacuum' or 'Air' braked trains through a single Driver's Brake Valve.

20 – 1200 H.P. Type '2' Diesel-Electric Locomotives. Built by Associated Electrical Industries Ltd. and fitted with Crossley Brothers Ltd. engines. These Locomotives are now in service on British Railways.





52 – 1100 H.P. Type '2' Diesel-Hydraulic Locomotives being built by the North British Locomotive Co., Ltd. with N.B.L./M.A.N. Engines and Voith/North British Hydraulic Transmission.

THE ABOVE LOCOMOTIVES ARE EQUIPPED WITH METCALFE-OERLIKON BRAKE EQUIPMENT

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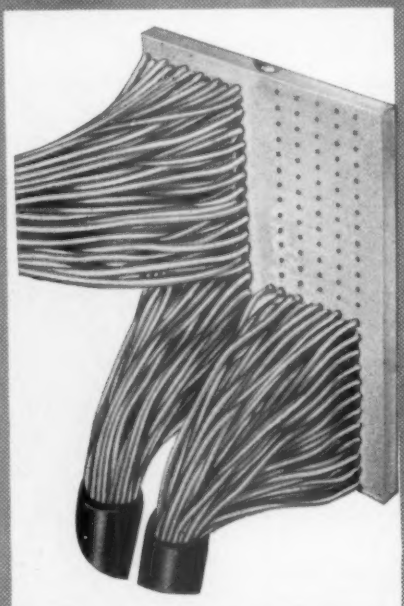
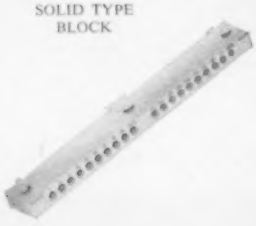
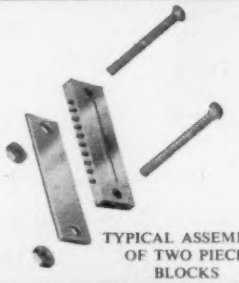
A-MP Taper Blocks, used in conjunction with A-MP Taper Pins, form the most practical method of providing from 10 connections upwards in the smallest possible space. The housings are of nylon for positive dielectric performance and mechanical strength. The blocks are made in basic units of 10, 20, 30 and 60 cavities, and any combination of taper pin receptacles is possible in each block. They are designed for stacking to provide any desired capacity and thus afford the design engineer a remarkable degree of design freedom.

May we send you our new catalogue on Taper Technique?



SOLID TYPE BLOCK





TYPICAL ASSEMBLY OF TWO PIECE BLOCKS

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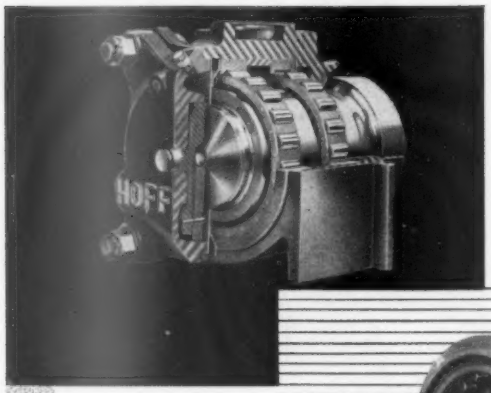

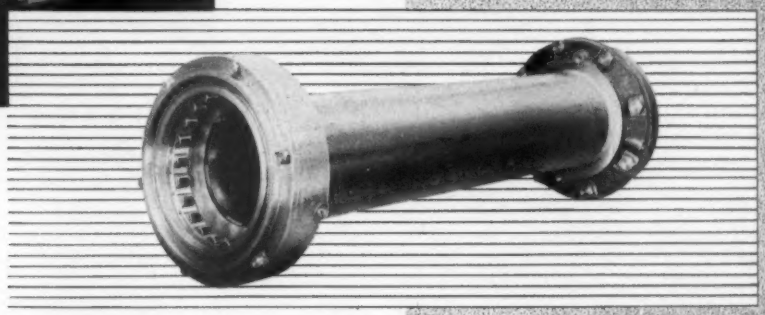

PICCADILLY LINE

CENTRAL LINE

METROPOLITAN LINE

4,332 AXLEBOXES and 1,332 SUSPENSION-UNITS for L.T.E.

London Transport Executive, as the first stage of its re-equipment of the "Underground" ordered new "Silver" rolling-stock for the Piccadilly Line. This stock, seventy six seven-car train sets, is fitted with Hoffmann Roller Bearing Axleboxes, and Hoffmann Roller Bearing Suspension Units.

London Transport Executive is now also re-equipping the Central and Metropolitan Lines, and has placed orders for a further 4,332 Hoffmann Axleboxes and 1,332 Suspension Units to be fitted to the new "Silver" stock coming into service on these lines.

These orders continue an association dating back to 1933 when Hoffmann Axleboxes were first supplied to the "Underground".

The illustration shows engineers assembling bogies for the "Silver" coaches built for the Piccadilly Line by Metropolitan-Cammell Carriage and Wagon Company Ltd., who, with Cravens Ltd., and British Railways are supplying the new "Silver" trains for the Central and Metropolitan services.

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Hoffmann Axleboxes are in universal use on all types of locomotives, electric stock and general rolling stock as well as on heavy industrial vehicles. There is also wide scope for Hoffmann traction motor suspension units on electric stock, diesel electric and electric locomotives. Whatever the project we shall be pleased to help.

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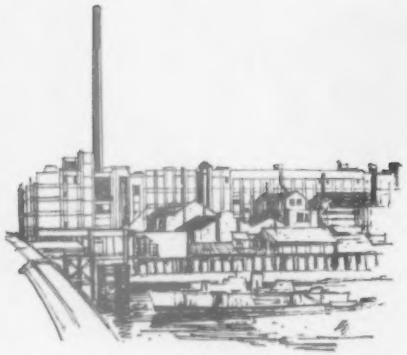
IT REALLY STANDS OUT

(There are 273 feet of it)*



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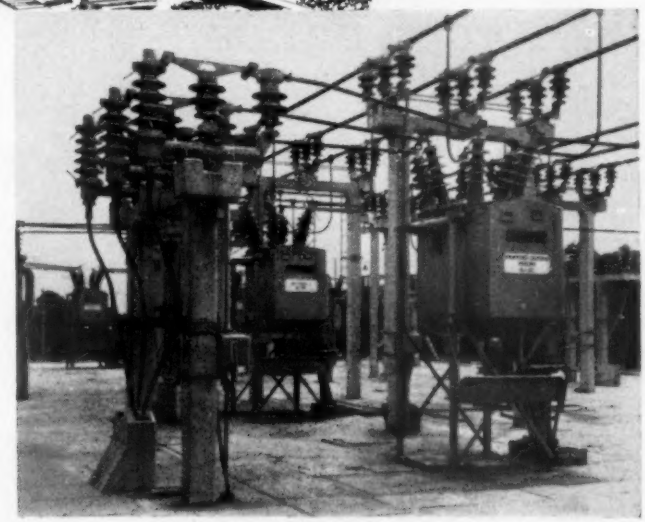

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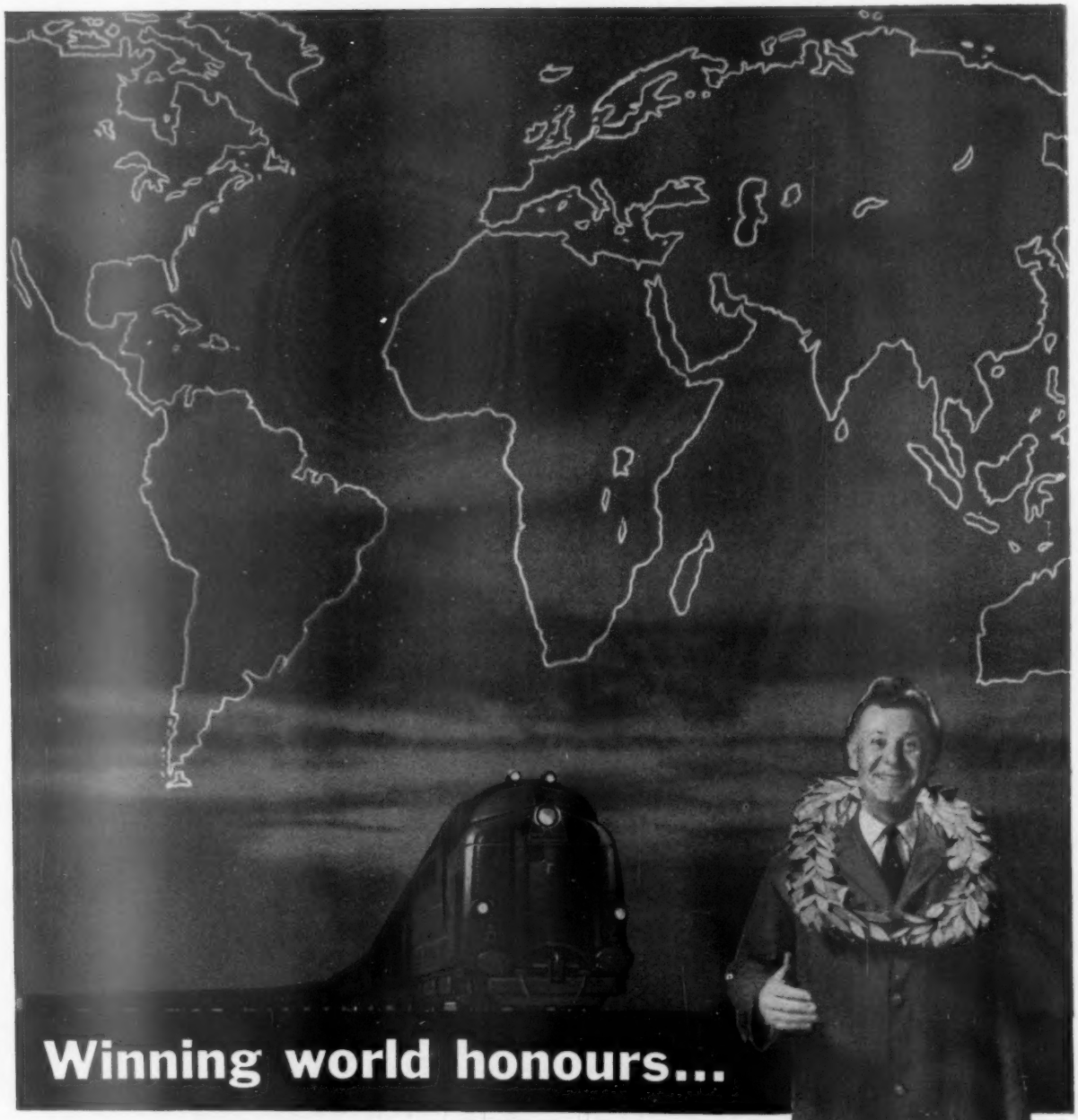

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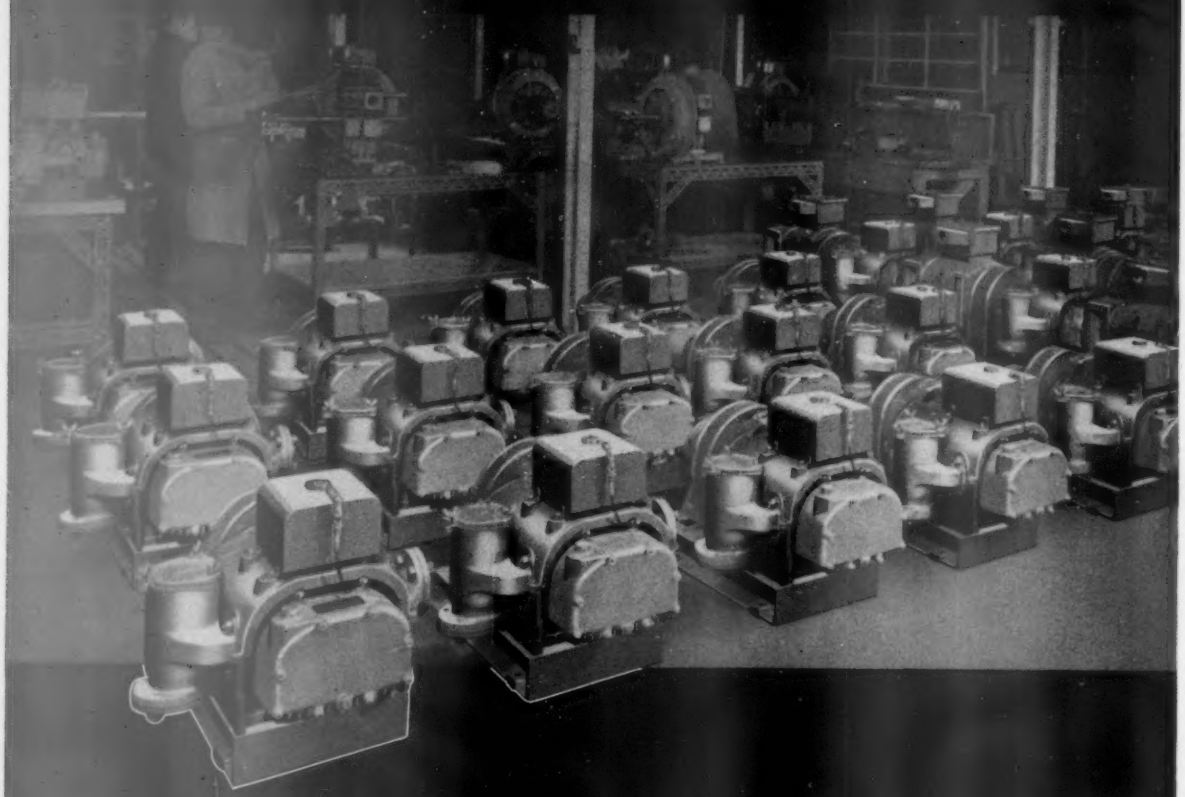

Northey rotary exhausters

Illustration shows Northey Rotary Exhausters being assembled for Diesel Locomotives for Sudan, Electric Locomotives for India and for Diesel Electric and Diesel Hydraulic Locomotives for British Railways.

No pistons, no valves,
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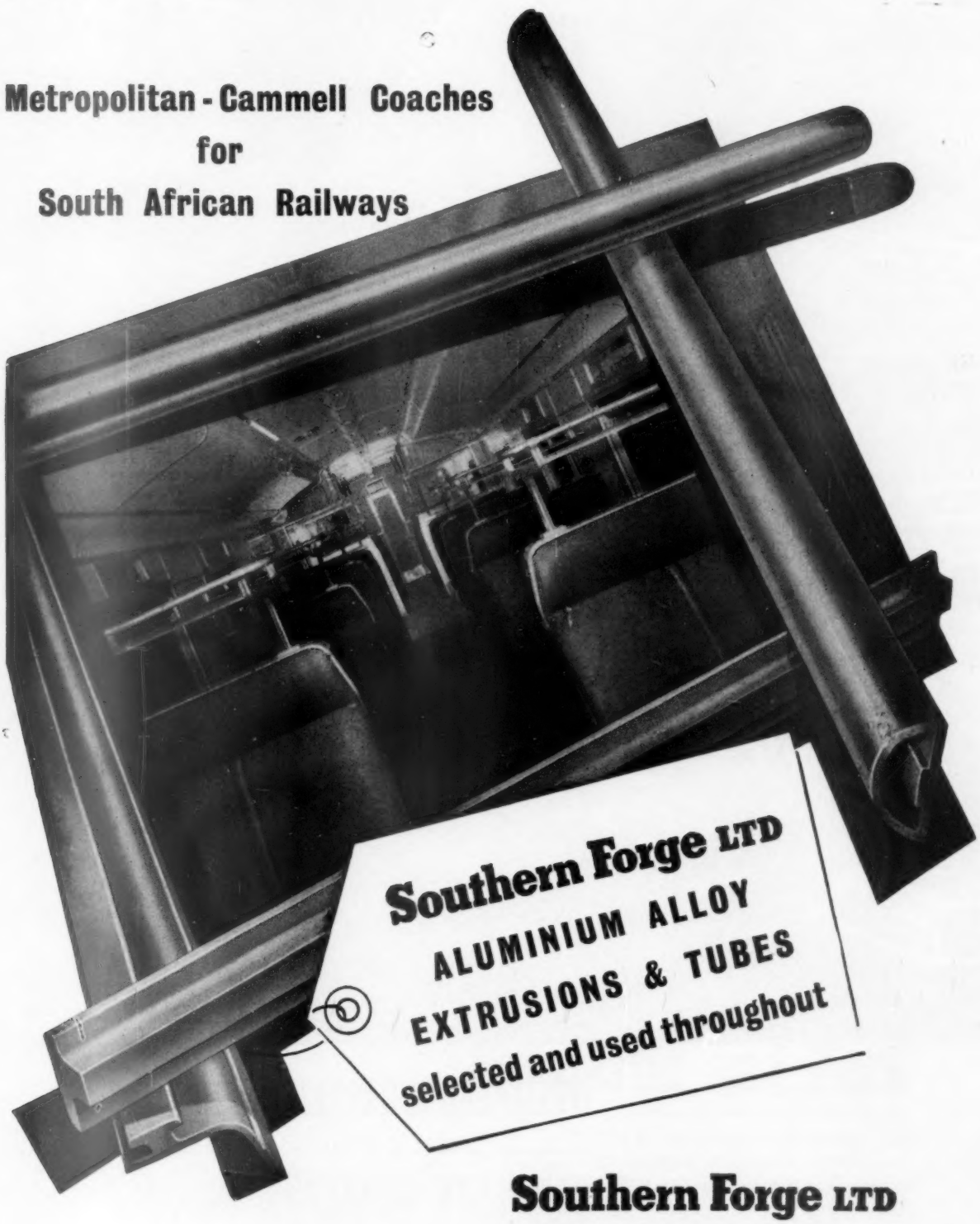

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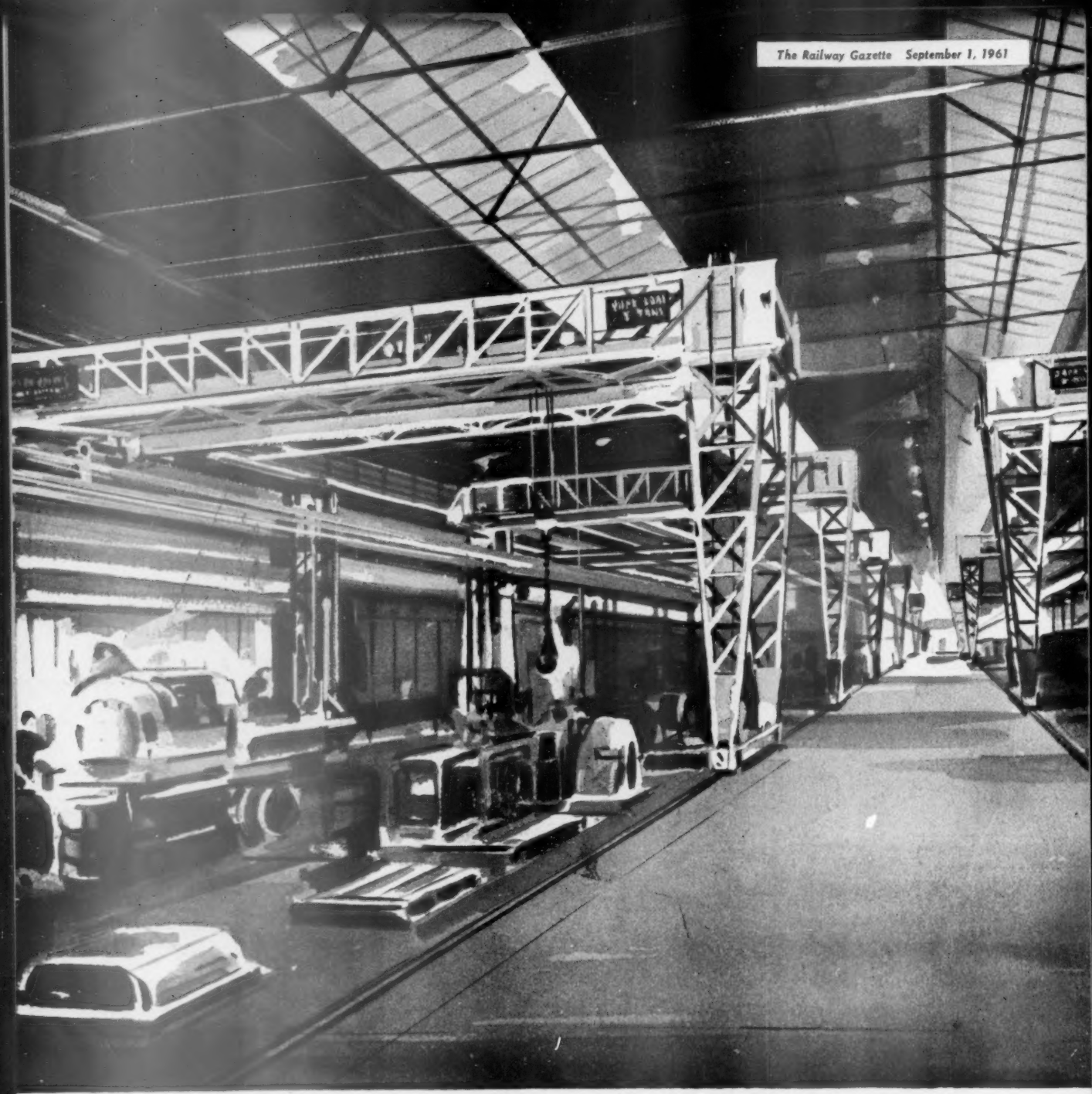

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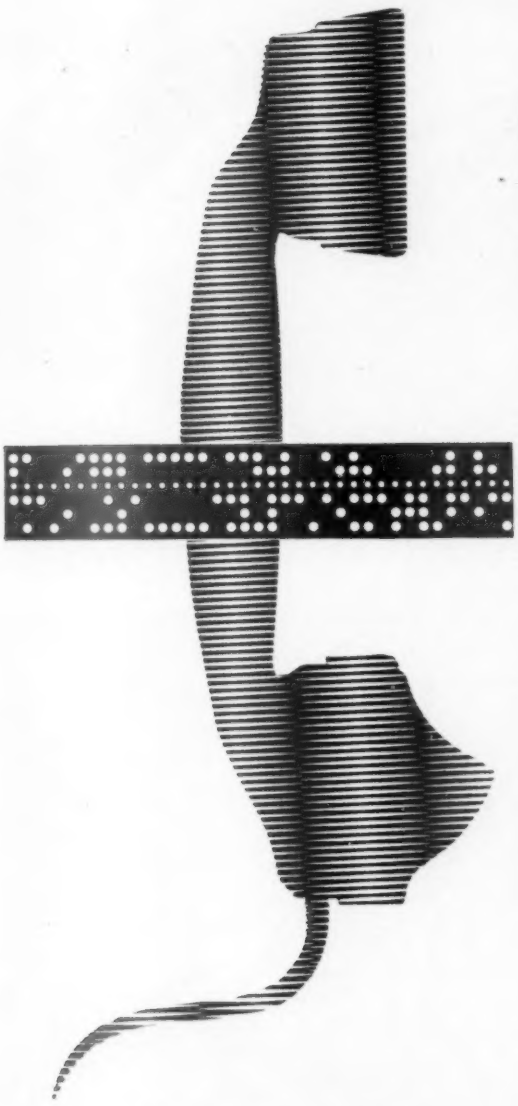

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300 Channels between Newcastle and York

British Railways first microwave multichannel system from Newcastle to York via Darlington will have a 300 telephone channel capacity. The system allows for channels to be dropped off at intermediate points and can accommodate high speed data transmission.

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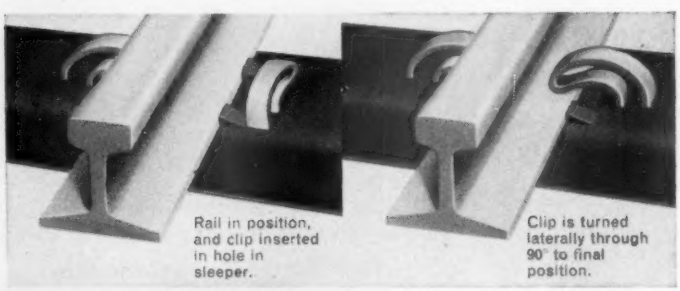
FASTENING ASSEMBLY



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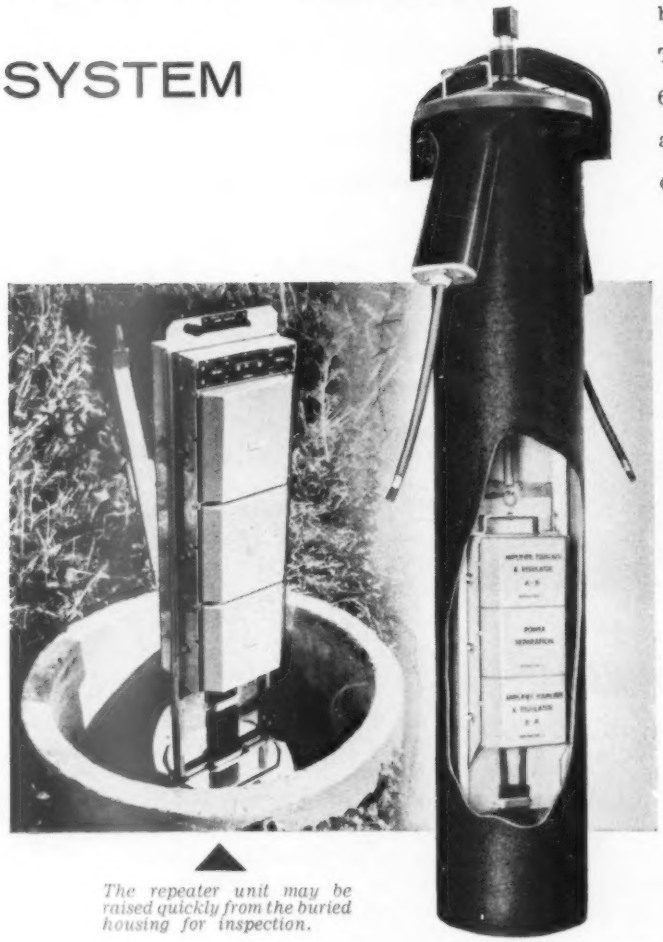

The repeater unit may be raised quickly from the buried housing for inspection.

All-transistor Repeater

The nominal repeater spacing is 12000 feet (3,66 km), this has the advantage that in urban areas using loaded cables in ducts, where loading coil spacing is 6000 feet (1,83 km) the system can often be installed without the need for any road work. Power is fed to the dependent repeaters over the cable from terminal and main repeater stations. Power feeding points may be as far as 70 miles (112 km) apart.

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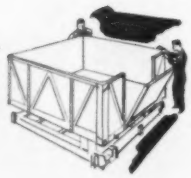
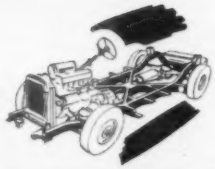


MOTOR CAR CHASSIS FRAMES

Precision production of chassis frames on purpose-built welding assemblies.



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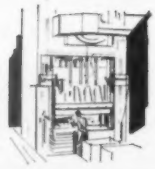

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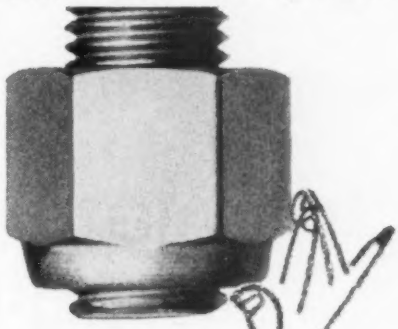

** These times are based on 'The Handbook of Standard Time Data for Machine Shops' by Haddon & Genger published by Thames and Hudson Limited, London.*

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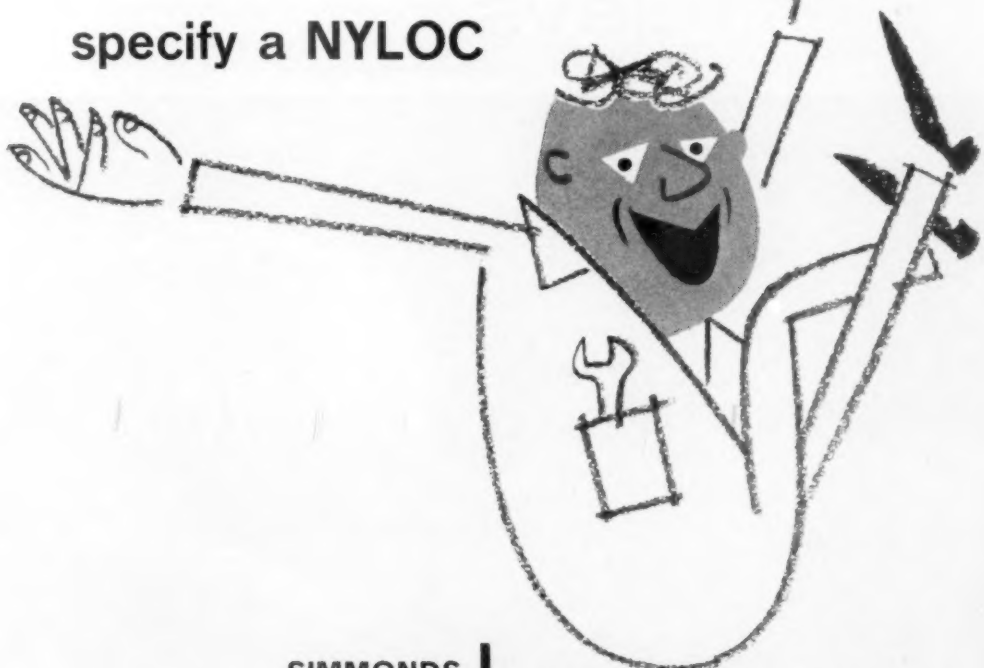

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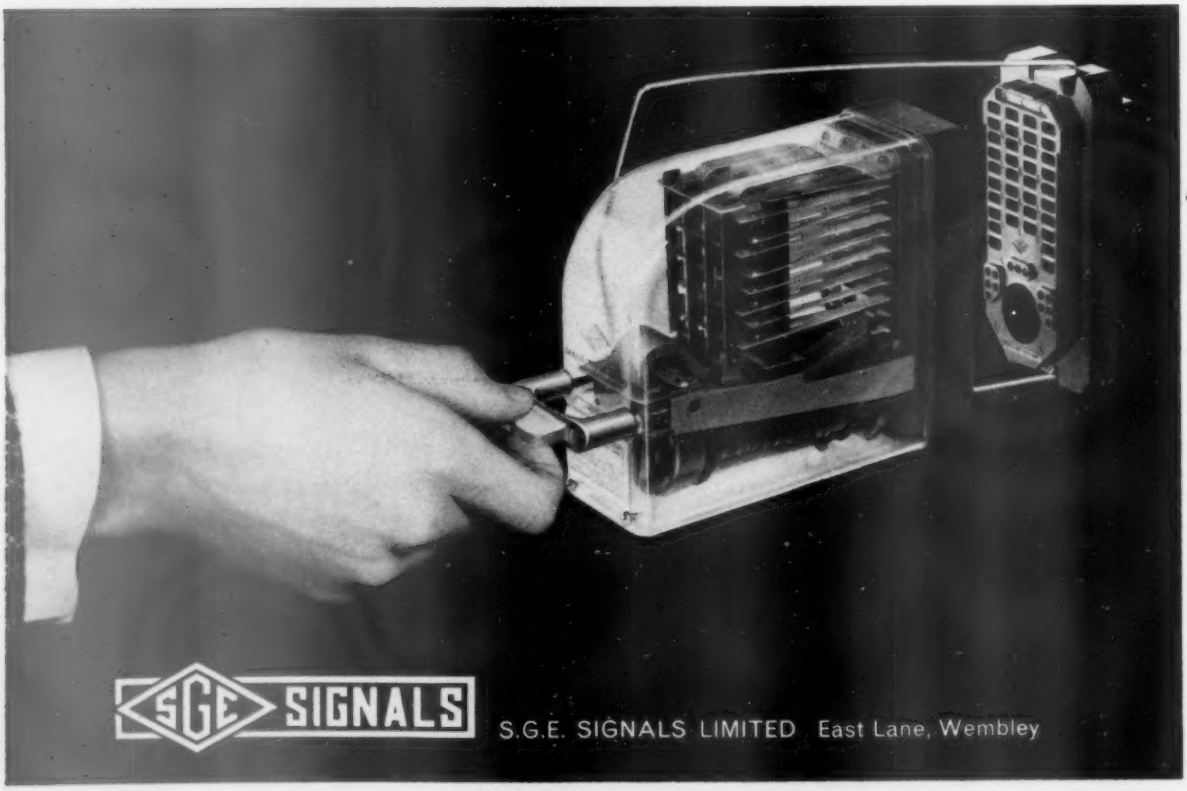

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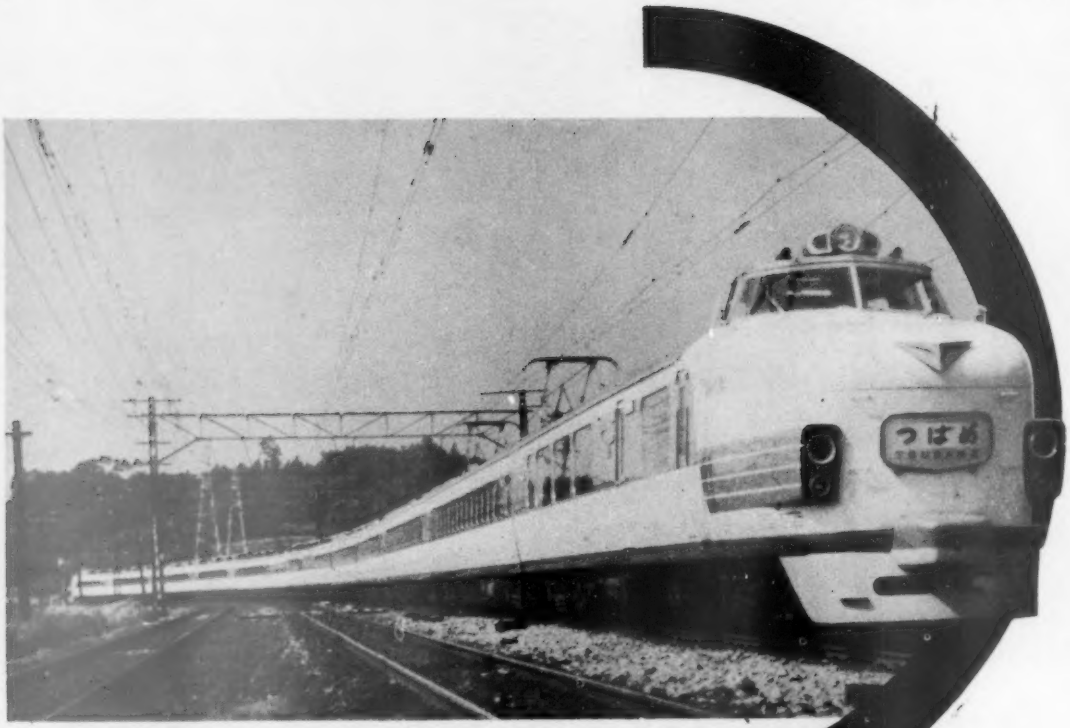

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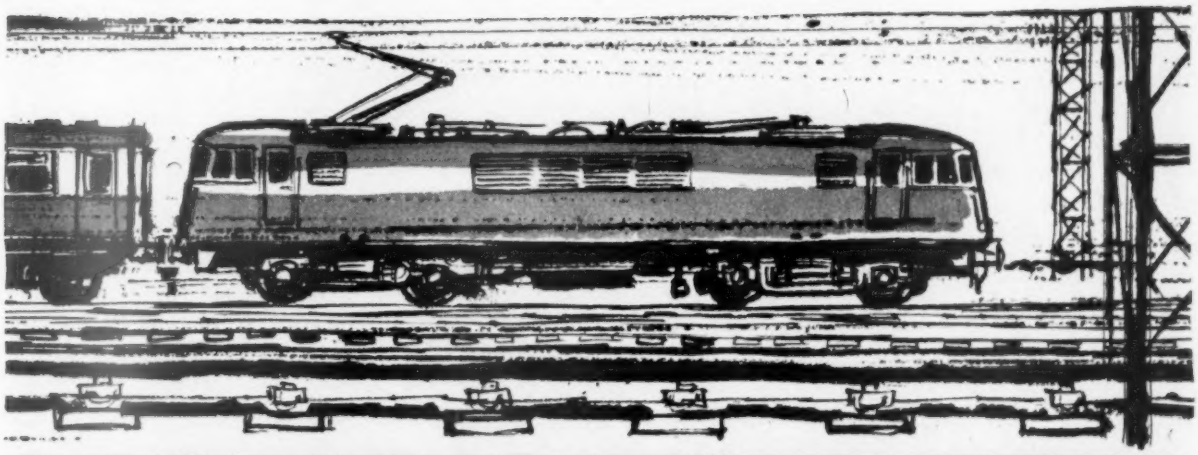

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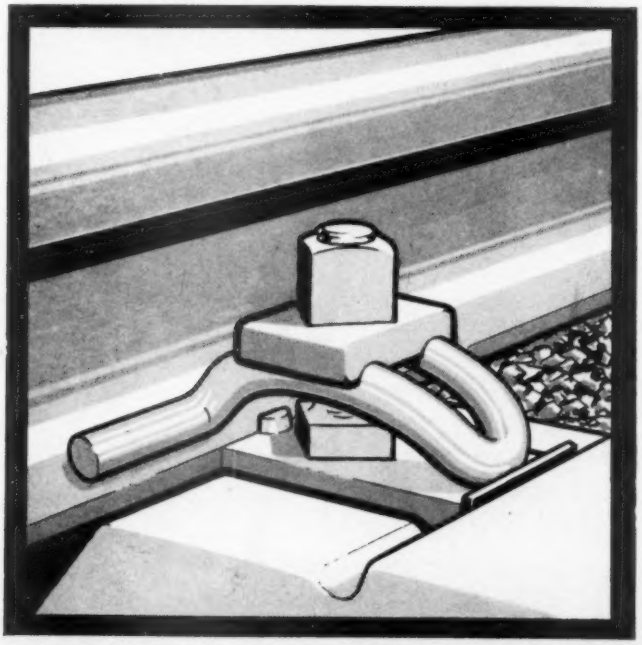

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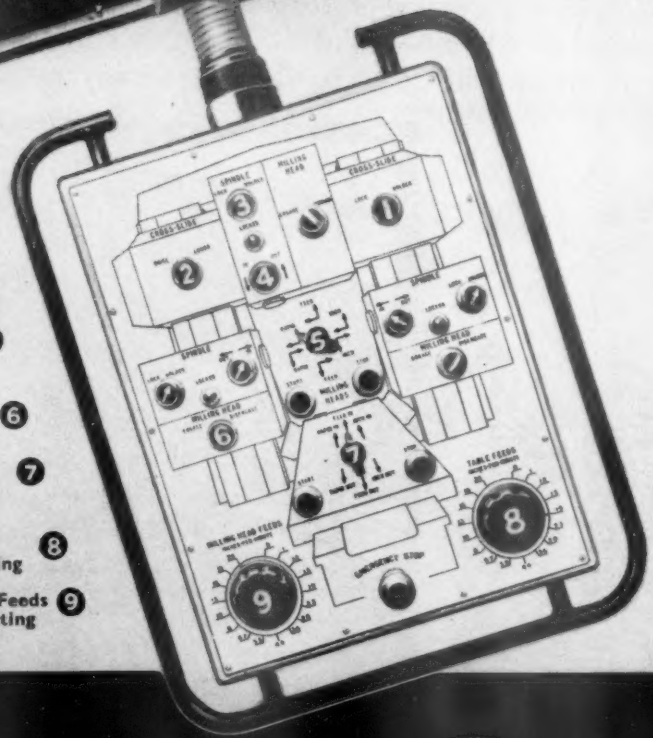

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2. Cross-slide : Raise or Lower
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4. Spindle Traverse : Down or Up
5. Milling Heads Traverse : Select Direction and whether Rapid Feed or Inch
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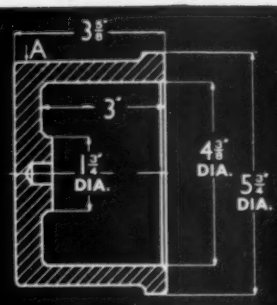

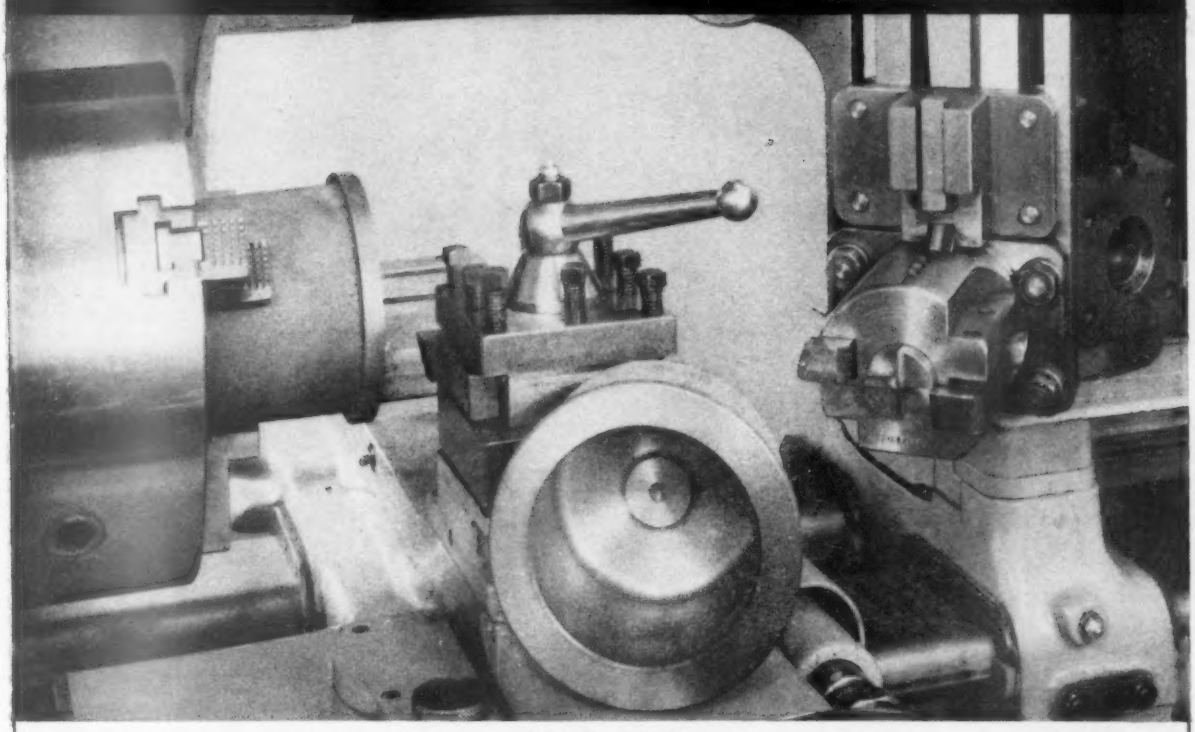

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	Hex. Turret	Cross-Slide		Feet per min.	Metres per min.	Cuts per inch	m/m per rev.
1. Grip at A	—	—	—	—	—	—	—
2. Bore 4⅜" dia., face bottom, form end boss	—	—	—	—	—	—	—
and drill ⅜" dia. hole,	1	—	177	278	84·8	76	·334
Turn flange dia.,	—	—	119	180	54·7	Hand	Hand
Chamfer bore & flange	—	—	—	—	—	—	—
Finish face end	—	Rear	177	278	84·8	Hand	Hand
3. Remove from chuck	—	—	—	—	—	—	—

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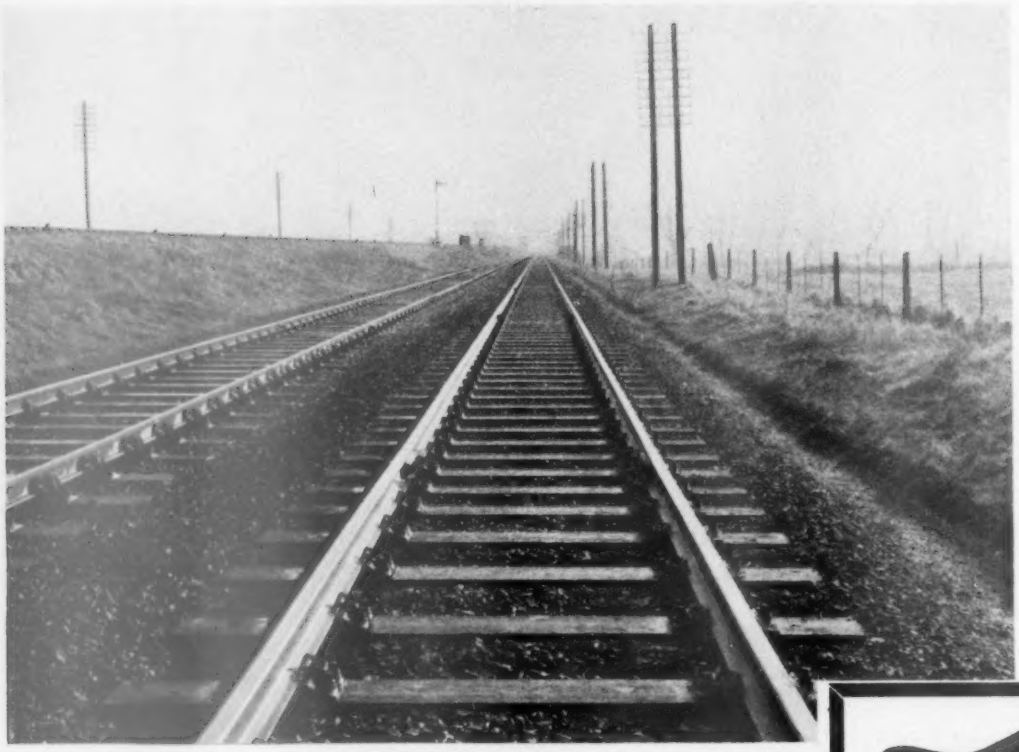

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A journal of Management, Engineering and Operation

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CONTENTS

Editor: B. W. C. Cooke, Assoc. Inst. T.

33, TOTHILL STREET, WESTMINSTER, LONDON, S.W.1

Telephone: WHitehall 9233 (24 lines)
Telegrams: "Trazette Parl London"
Overseas telegrams: Trazette, London, S.W.1

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BRISTOL: 20, Victoria Square, Clifton ... ... *Bristol 33873*

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Planning the economy

THE Chancellor of the Exchequer has now seen both sides of industry and discussed with them his ideas for a national economic planning body, which would be responsible for steering industrial and commercial growth on a long-term basis. The response he got at his two meetings was very different. Trades Union Congress leaders would go no further than to undertake to consider the Chancellor's suggestions and to give him a reply later. This was probably a tactical response, based possibly on the fact that although the Labour Party, generally, has given much lip-service to economic planning, it does not welcome such an approach by a Conservative administration. The employers, on the other hand, represented on this occasion by the Federation of British Industries, the British Employers' Confederation, the Association of British Chambers of Commerce, and the National Union of Manufacturers, welcomed the ideas put forward by the Chancellor. These were that there should be either an entirely independent body, such as that suggested in the recent report by the Heyworth Council, or a two-tier organisation on which there would be Ministerial representation. Mr. Lloyd seemed to envisage the independent body as a large-scale organisation, which would publish reports and thus endeavour to sway public opinion, but also produce longer term assessments of economic development. The second body would consist, basically, of a permanent staff of economic experts which could be independent of Government influence. It would examine all industries with a view to assessing their needs and the contributions they can make to the national economy. Output, exports, imports, employment, investment, demand for power and fuel would be among the primary matters which would come within the purview of this body. Superimposed on this would be a much smaller organisation which would prepare reports on the long-term requirements of the country as a whole, and present these for the consideration of an even smaller national economic council. On this would sit representatives of the employers, trade unions, and the nationalised industries. The Chancellor of the Exchequer might be its chairman. It is the second of these alternatives that employers welcomed. As a result of the meetings, Mr. Lloyd is to prepare certain proposals for submission to a joint meeting of all parties concerned, which it is hoped, will be ready next month.

Mr. T. C. Courtney

MR. T. C. COURTNEY, who died recently, was a very popular figure with both British and Irish railwaymen. Apart from the chairmanship of Coras Iompair Eireann, which he held from 1949 to 1958, at a time when that undertaking was undergoing considerable transition, he had been for ten years Railway Inspecting Officer to the Department of Industry and Commerce. Mr. Courtney, who was born in Cork in 1894, was a frequent and popular member of Irish delegations both to this country and to the Continent and he had conducted numerous inquiries on behalf of his Government. He was basically a civil engineer with very wide interests. His first railway position was as an assistant in the Chief Engineer's Office of the Cork, Bandon & South Coast Railway in 1916. Before he went to C.I.E. as Chairman, he was Chief Engineering Adviser to the Department of Local Government. He had very close personal connections with many British railway officers and was an active member of the Fishguard & Rosslare Railways & Harbours Company, run jointly by the B.T.C. and C.I.E.

Sir Leonard Sinclair

ANOTHER change in the composition of the British Transport Commission has been announced. Sir Leonard Sinclair, formerly Chairman of The Esso Petroleum Co. Ltd., and a part-time Member of the B.T.C. since September, 1958, will retire on the expiration of his term of office on August 31. He has been

a popular and hard-working member of the Commission, although his activities have not brought him into the public eye. He has brought to his duties at the Commission the benefit of a wide experience which has proved of considerable value. He has sat on the Traffic Committee under the chairmanship of Major-General G. N. Russell, and also on the Works & Equipment Committee, which is presided over by Mr. John Ratter. He has also worked on the sub-commission dealing with docks and that relating to waterways. In these various capacities he has given freely of his time and has placed his commercial knowledge freely at the disposal of his colleagues.

Railway property board

IN OUR last week's issue we referred to the appointment of Mr. H. L. Roy Matthews, Chairman of Crosse & Blackwell (Holding) Limited, as Deputy Chairman of a company set up by the British Transport Commission to accelerate the development of its property holdings. Mr. Matthews is a Member of the Southern Area Board and of the Property Committee of the Commission. It has since been announced that Railway Sites Limited has been formed by the Commission to advise on and expedite the development of major railway properties. The Chairman will be Major-General G. N. Russell, a Member of the Commission and also of one of the main committees—that dealing with property—of the Commission, as well as being Chairman of the Eastern Area Board. Two other members of the Property Committee, Mr. Roy Matthews, the new Deputy Chairman, and Sir Reginald Wilson, a Member of the Commission and Chairman of the London Midland Area Board, will also be directors of the company. The Managing Director of Railway Sites Limited is Mr. W. S. Barnes, who is the Chief Estate & Rating Surveyor of the British Transport Commission, but who is to relinquish that post to devote his full time to his new position.

Kingmoor Marshalling Yard

IT IS now clear that work on the Kingmoor Marshalling Yard near Carlisle is to continue so that the completion date in late 1962 will be achieved. This is the effect of an announcement made after a meeting of railway officials and contractors on Tuesday last which allayed the anxiety aroused two weeks earlier, when it was stated that work was to be held up so as to keep within the railway budget for the year. The statement issued this week said that priorities had been altered by the Civil Engineer to allow the Signal Engineer to maintain his original programme, and it is understood that little change will occur in the number of men—about 400—involved in the construction of the yard. There can be no doubt that the original statement that the work was to be slowed down caused more important reactions than its authors had expected.

Institution of Locomotive Engineers

THE syllabus of general meetings in the 1961-62 session of the Institution of Locomotive Engineers promises an interesting and varied season. After Mr. J. F. Harrison's presidential address on September 26, there will be papers on "Control of diesel locomotives" (Mr. O. Schlaepfer, October 24); "Some problems in vehicle riding" (Mr. E. S. Cox, November 23); "The engineering aspect of catering on trains" (three papers covering British Railways experience, overseas experience, and the catering manager's viewpoint by Mr. H. Wilcock, Mr. W. E. Bulman, and Mr. H. Simons respectively, December 21); "Progress of 50-cycle a.c. electrification on British Railways" (Mr. S. B. Warder, January 23); "Monorails" (Mr. H. H. C. Barton, February 6); "Railcar development on British Railways" (Mr. A. E. Robson, March 6); and "Design and development of a gas turbine locomotive" (Mr. J. O. P. Hughes, April 17). Mr. Hughes will be addressing the annual general meeting. The annual dinner and dance and the annual luncheon will both be held at the Dorchester Hotel, London, on December 14, 1961, and March 2, 1962, respectively.

The appeal of cheap fares

CHEAP off-peak fares, recently introduced on the Liverpool-Wigan diesel service of British Railways to encourage passenger travel, have proved unsuccessful in that respect and have been withdrawn. A British Railways spokesman is reported to have commented: "We found that the idea that people are attracted by cheap fares is a mistaken one." This is a generalisation which scarcely covers an exceedingly complex matter. Its implication that people in favour of lower fares should be prepared to rush to the railways as soon as one particular fare is decreased ignores the irrational prejudice, as opposed to any real financial difficulty, which forms the general basis of opposition to paying reasonable rates for public transport. It also disregards the "snob" attraction of a commodity or a service which costs a little more. This is especially active in a time of rising standards of living, such as the present. Its truth is reflected in the success of British Railways' luxury train services and of the railway hotels, both offering first class service at first class prices.

Station arrangements at busy terminals

TO DETERMINE where, and of what size, entrances and exits should be in the new station planned for Victoria, the Southern Region of British Railways recently conducted an oral survey, interviewing week-end holidaymakers queueing for tickets. Each was asked by what means he had travelled to the station: was it by bus, Underground, taxi, suburban train, or on foot? It is to be hoped that the Region will also turn its attention to the station arrangements for waiting passengers at Waterloo, where queues stretching many hundreds of yards are commonplace during peak holiday periods. Under present arrangements, the holder of a seat reservation on a popular train must queue for anything up to half an hour if he wishes to gain the platform in an orderly manner. Why are there not separate gates for those holding reservations? Why, also, are there not systems of guide rails, designed to accommodate two abreast only, and incorporating a type of elevated slide similar to those used in cafeterias for trays, on which passengers could rest their luggage and push it along as they advanced?

Marketing Survey of East Africa

ON THE recommendation of the Export Publicity Council, the Board of Trade Journal has published a survey on marketing and publicity in East Africa. Aimed particularly at exporters new to the area, the survey gives topographical, economic, and political information about Kenya, Uganda, and Tanganyika. It gives information on how the market should be tackled, and gives advice on local advertising methods and on choosing an agent. It shows the distribution of local purchasing power, describes inland freight services and charges, and sums up the market for both consumer and capital goods. There is information about trading conditions in the area and statistics showing local imports and exports. Possible development and the present location of industry are also featured. There are maps and tables of interest to exporters and photographs showing something of the challenge of the market. A reprint of the survey is available free from the Export Publicity & Fairs Branch, Board of Trade, Horse Guards Avenue, London, S.W.1.

Accident at Strande Castle Crossing

THE report of Colonel W. P. Reed, Inspecting Officer of Railways, Ministry of Transport, on the accident which took place last January at Strande Castle occupation level crossing, between Maidenhead and Cookham, is summarised on page

258 of this issue. This is the fourth accident to take place at Strande Castle within the past year. Colonel Reed recalled certain points raised by the late Sir Alan Mount in his report on a similar accident in 1939, when an express train was derailed. Since then, the problem has become more serious, both because of the growth in motor traffic and because modern diesel and electric trains are lighter and so more vulnerable than steam trains. Some occupation crossings carry as much road traffic as do public crossings—with full measures of control. Clearly, such crossings need better protection than is afforded at present. The behaviour of the public also should be improved: undisciplined motor-car drivers at level crossings are just as serious as their counterparts on the roads.

Electronic data processing

THIS week, we describe and illustrate the highly developed methods of electronic data processing used by the Société Nationale des Chemins de fer Français. Without being specialised computing machines in the true sense, electronic data-processing equipments can deal with complex problems of a scientific nature, either simultaneously with administration tasks, or as supplementary work. Thus, the Gamma 60 will be of valuable assistance to the Operational Research Unit and to the various services of the S.N.C.F. The recording and eventually the coding of basic data must, if possible, be done at the level of the originating establishment which is most often the primary administrative unit; station-accountancy centre, locomotive depot or repair shop, and track maintenance section. The re-grouping of this data and the processing of data of local interest is performed at district level, by new organisations called "Centres Mecanographiques Inter-Arrondissements" of which there are 26 for the whole of France. These centres are equipped with punched-card machines of medium capacity and relatively low performance. They are very simple structures in relation to the new organisation. Finally the centralised processing of data must be performed by the electronic data-processing equipment which is gradually replacing the 12 offices equipped with machines working on mechanical principles.

Design in transport

IT is increasingly realised in industry that good design is a sound commercial proposition. More and more care is being paid to an increasing number of manufactured goods with this end in view, and there can be no doubt that the results are often economically, as well as aesthetically, well worth while. On British Railways a good deal of thought has been devoted to this subject, but, undoubtedly, because of the size of the undertaking, its long history, and the disabilities it has suffered by a lack of replacements during and after the war, there still remains a great deal to be done.

Mr. T. H. Summerson, a Member of the British Transport Commission and Chairman of the North Eastern Area Board, has made some comments on this subject which are well worth studying in the current issue of *British Transport Review*. As he points out, it is very easy to see the difference between good and bad design by comparing the exterior of the best of the great steam locomotives of the 1920's, with their obvious fitness for purpose, purity of line, and attention to detail, with some of the less happily-designed engines then in use in some overseas countries. He suggests that some of the American locomotives of that period were "so covered with odds and ends of pipes that they looked rather like a plumber's shop, and a very untidy one at that." He lays down the excellent precept that the design of the equipment with which British Railways provides itself should be simple. It should have the greatest possible regard to economy in cost, both of construction and of use. It should pay full attention to commercial considerations, avoid any attempt at creating extraneous effect, and at the same time agree with the best in British contemporary taste. Moreover, apart from its purely engineering functions, design, so far as it is concerned with style and appearance, is essentially an element of public relations, both inside and outside the organisation.

In many ways good design can be a most effective way of improving the railway image presented to the public. Moreover, it can have a beneficial effect on internal public relations by boosting the morale of the staff. It is equally important to remember that many of the items of railway equipment now being produced will still be in service in the 21st century, and it will be necessary for them still to appear up to date. The new "Blue Pullman," in its style, appearance and internal design, seems as good as any train in the world, and Mr. Summerson points out that when he travelled in it from Paddington to Birmingham, it rode beautifully at nearly 90 m.p.h.

Buildings associated with transport certainly have undergone considerable improvement in recent years. Most of the new stations now appearing are excellent and do the railways credit, although it is true that one may still find details which let them down, such as mean litter-baskets, clumsy seats, or just badly placed posters. Consideration of all details involved is necessary to secure overall good design. In general, the new signal-boxes are also good. Many old lineside buildings remain, most of them at least undistinguished and Mr. Summerson draws attention to the fact that unsatisfactory features can be concealed quite effectively merely by not accentuating them. Rain-water gutters, downcomers and so on are neither handsome nor interesting, but one often sees them accentuated by contrasting paint. In one Region he noticed that a whole series of unattractive minor lineside buildings had been brought startlingly to attention by this means. The buildings, mostly dull grey in colour, might have escaped notice had not every pipe on them, every door, every banister, been picked out in what purported to be the regional colour. With all due regard for the traditional uses of regional colours and the respect and tradition which surrounds them, it is not clear why they should be used so indiscriminately on stations and other buildings unless they happen to become part of what may be considered good design.

As to coaching stock, he acknowledges that present designs make for extreme difficulty and cost in achieving complete cleanliness, and that it will be one of British Railways most satisfying and remunerative tasks to produce a carriage which apart from good performance qualities, has been designed successfully to make its efficient cleaning by mechanical means certain and cheap. He adds appositely that this country has to carry the most litter-prone passengers in Europe!

London Midland Region winter timetable

THERE are considerable changes in the arrangement of the London Midland Region winter timetable book. By the wholesale excision of connectional destinations from the tables, there has been a considerable amount of compression. The Euston-Crewe and Crewe-Carlisle services are combined in a single table, as also the Liverpool-St. Helen's-Manchester and Manchester-Huddersfield-Leeds tables, the latter cut short at Huddersfield. The Manchester-Halifax-Bradford-Leeds table similarly is brought to an end at Sowerby Bridge, and the Midland main-line table from St. Pancras to the North is carried no further than Sheffield. The Afon Wen branch is brought into the Crewe-Holyhead table, and the Cambridge-Bletchley and Bletchley-Oxford tables are combined.

While the reduction in the size of the L.M.R. timetable book may be welcomed, the extremely small type size of some of the tables is distinctly trying to the eyes, and the cutting short of certain main-line tables strictly at Regional boundaries—e.g., Sowerby Bridge—which makes it necessary to consult another Regional book for times at stations beyond that boundary, is hardly helpful.

As in the last previous L.M.R. timetable book, the train service is shown as withdrawn over certain branches threatened with

closure, but supplementary tables printed at the end of the book indicate that the services concerned are continuing to operate for the time being. They are the branches from Bedford to Hitchin and Northampton; from Leicester to Rugby; from Chester to Ruthin and Denbigh; from Liverpool to Manchester *via* Rugby, and the full Great Central main-line service, which it was proposed to withdraw from all stations between Aylesbury and Nottingham other than Brackley, Woodford Halse, Rugby, Lutterworth, Leicester, and Loughborough, and all stations between Nottingham and Sheffield. While the Bedford-Hitchin passenger service is likely to cease shortly, there is considerable opposition to some of the other closures, on the G.C. main line in particular; hence the delay in coming to a decision.

While all allowance must be made for the engineering work in progress on the Western Division main line in connection with electrification, the almost exclusive use of Type 4 diesel-electric locomotives on the principal trains, with their capacity for much quicker acceleration from out-of-course slacks than steam locomotives, might well have made possible some reduction of the extremely ample recovery times between Euston and Crewe; but the opposite is to take place. In general, Down expresses will leave Euston 10 min. earlier, and those in the Up direction will arrive 10-11 min. later. The Up "Royal Scot" and "Caledonian" will arrive 5 min. later, in 7 hr. 10 min. from Glasgow, but the Up "Mancunian" is to be slowed 15 min. and to take no less than 4 hr. for the non-stop journey of 188½ miles from Manchester. The Up "Comet" also will be decelerated by 15 min., to reach Euston at 9.50 p.m., in 3 hr. 55 min. from Manchester.

Although there is no hint in the Scottish Region timetable that the "Royal Scot" will make a passenger stop at Carlisle, the L.M.R. book shows this stop to pick up passengers resumed as usual in winter. In the Down direction the "Royal Scot" is once again to call at Preston, as last winter, in addition to Carlisle. On the Midland Division the 4.30 p.m. from Manchester to Euston is to start at 4.25 p.m., run non-stop to Derby in 75 instead of the present 86 min., and reach St. Pancras at 8.30 instead of 8.40 p.m.

The Midland timetable also shows a number of minor decelerations, though in some cases intermediate adjustments of times mean that overall journey times of the trains concerned are not extended. Here again, in view of the extensive use of the even more powerful 2,500-h.p. Type 4 diesels, some acceleration at least might have been looked for, even if only of selected business trains as an earnest to the public of the type of service to be expected as the result of modernisation.

There is one such preview, in the new midday working of the "Midland Pullman." At 11.20 a.m., 20 min. after arrival from Manchester, this will leave St. Pancras on a 70-m.p.h. run to Leicester, and continue with a Loughborough stop to Nottingham, reached in 2 hr. at 1.20 p.m. Return at 3.45 p.m., with the same stops, will bring the Pullman into St. Pancras at 5.45 p.m., with a 25-min. turn-round time before its departure for Manchester at 6.10 p.m.

Railway export opportunities

MODERNISATION plans are not peculiar to British Railways. Railways all over the world realise that they must re-equip themselves, so as to save labour, reduce costs, and provide more efficient services. This gives a worthwhile opportunity to a large variety of British manufacturers and exporters.

Every week, *The Railway Gazette* publishes a selection of contracts and tenders which includes overseas calls for tenders received by the Export Services Branch of the Board of Trade. Few, apart from those immediately concerned, realise the diversity of railway requirements. It is not only a question of locomotives, rolling-stock, rails and electrical equipment. There is hardly an industry which could not find potential customers in railways. Tools, textiles, office equipment, even paper and pins, all are grist to the railway mill.

At a time when it is of paramount importance to expand our export trade, overseas railways provide wide scope for manufacturers willing and competent to take advantage of the market available. There are obvious problems. Competition in overseas markets is keen, and the home market offers an easy "soft option." Too few manufacturers know the right way to seek export trade.

Finance is one important aspect. The big manufacturer, with his expert advisers, knows the ropes, but the small manufacturer, unused to export business, hardly knows where to begin. The purpose of this and succeeding articles is to help him in this direction.

For most people, the best line of approach is through their local bank manager. Before discussing a project with him, it would help if the possibilities were known. A bank manager has direct access through his Head Office to all the machinery of "The City." He cannot be expected to carry every detail at his finger-tips.

One problem is the extent of the credit the overseas buyer will require. Many goods can be sold with payment 90 or 180 days after contract or delivery. In the case of new equipment or machinery, the term may extend over five or seven years. Major projects may entail even longer credits, running up to ten years or more. No general rule can be laid down.

For the short-term credits, the simplest form of finance is that of an overdraft from the manufacturer's bankers, who already know all about him. There are certain difficulties. The "credit squeeze" is still in force, and thus imposes an overall limit on the total amount the banks can lend to all their customers for all purposes. Yet over the past few years the banks have definitely become more "export-minded," and whatever intimations they receive from the authorities, it is difficult to believe that they will be asked to curtail loans to finance exports. Indeed, the more the nation exports, the sooner the credit squeeze should ease.

If a manufacturer borrows from his bank to finance his exports, he may find that he can borrow less for other purposes. An alternative method of short-term finance is that of bills of exchange. By far the best course would be to persuade the overseas buyer to open through his own bank a confirmed London credit, but competition from the manufacturers of other countries may rule this out. Instead the manufacturer may be able to open a London credit from his end. Whatever he does, bills drawn against such a credit command the lowest rates in the London market.

Alternatively, he may seek to finance his business by means of "trade bills." The leading London discount houses are ready to arrange and take up approved bills of this kind, and will discuss possibilities with a manufacturer. It must be said at once that finance by means of bills is not suitable for transactions of less than £25,000 or £50,000. One suggestion is that a number of small manufacturers might get together and form a "consortium," so that they could arrange their finance jointly.

For medium-term credits, involving payment spread over five or seven years, the bank again should be approached. This may well be a case for the assistance of a merchant banker. These institutions do not, as a rule, provide finance out of their own resources. Their function is more that of an "arranger." The City is not divided into water-tight compartments. On the contrary there is close co-operation between the merchant bankers, the discount houses, the British and overseas banks and other institutions. A merchant banker is able to organise an *ad hoc* banking syndicate to finance medium-term credits.

For really long-term credits, a consortium of banks and insurance companies recently has been formed. If the terms of payment range over ten years, the banks will carry the first five or seven years, and the insurance companies will carry the remainder. This is because insurance companies are in a position to tie up their funds for a longer period than are the banks.

Which form of finance is, or can be, adopted depends on the

merits of each particular case. One preliminary step should always be considered. That is to get the payment insured by the Exports Credits Guarantee Department. This insurance will certainly make it easier to obtain finance; it may be the condition on which finance can be obtained at all. The Department offers numerous kinds of insurance. These will be discussed in a later article. A third will deal, among other things, with the cost of finance.

British Transport Police

RELATIVELY little prominence is given to the work of the British Transport Commission Police Force, which in recent years has undergone considerable reorganisation, both from an administrative and operational viewpoint. The annual report of the Chief Constable, Mr. Arthur C. West, covering the period to December 31, 1960, has just been issued. It is Mr. West's first annual report since taking up his command, and one of his major tasks, as executive head of the force, has been to implement those recommendations in the 1957 report of Sir Alexander Maxwell on the functions and organisation of the force which were accepted by the Commission. The effect of the accepted recommendations was the maintenance of a unified force for all the varied undertakings of the Commission, and the institution of a Police Committee as the medium through which the Commission could exercise its responsibilities. It was also necessary to re-align various police areas and to merge the London Transport Police into the main body and reconstitute it as a special division. The establishment of a criminal record office and the reorganisation of the Criminal Investigation Department of the force was also necessary, and the Chief Constable had to undertake the review of the establishment as well as to expand the training facilities and so forth.

The authorised establishment at the end of last year was 2,995 but the actual overall strength was 2,746. There is still a shortage of personnel and during 1960 the appointment of an Inspector was approved, charged with the duty of co-ordinating the recruitment of personnel.

From the beginning of last year a completely new system of documentation of crime was introduced, and this has resulted in reports relating to indictable offences following the standard pattern of the civil police force throughout the country. Liaison between one area and another in relation to crime investigation has proved to be much more easily accomplished, and officers transferred from one area to another are already familiar with the forms of documentation in use.

Although the reorganisation of the force has entailed a substantial reduction in the establishment of the Criminal Investigation Department, the number of detections and prosecutions for theft in 1960 was the highest for twelve years. The decrease in the establishment of the force, as a whole, with its accompanying need for re-deployment of manpower, has presented a number of administrative problems, but these have been overcome. The new headquarters at Park Royal has been a landmark in the history of the force, because never before has it had a central office of its own, adequate to its needs, from which the ramifications of the organisation can be supervised effectively and at which a proper appraisement of requirements can be made. Mr. West is confident that the coming into existence of this headquarters has helped greatly in creating a homogeneous force, has added to its prestige, and has enhanced the morale of its members.

The British Transport Police is one of the several organisations which must be under review at the present time as a result of the impending changes in the set up of the British Transport Commission. It provides a valuable service to all the component parts of the Commission and it is obvious from the Chief Constable's report that a great deal has been done to improve and co-ordinate its activities. If, as is envisaged in the White Paper on re-organisation of the nationalised industries, the components of the Commission are to be run as separate undertakings, there are bound to be serious repercussions on the police force. It would be a great pity if the manifest advantages and economies resulting from unified control and direction could not be preserved.

Fluctuating railway traffics

BY A CORRESPONDENT

BRITISH Railways began the second half of this year indifferently. In four weeks to July 16 they originated 115,000 fewer tons of merchandise, a decrease of 3·8 per cent and 169,000 fewer tons of minerals, a drop of 3·7 per cent, but carried 128,000 more tons of coal and coke, an increase of 0·9 per cent on 1960. Total tonnage fell by 156,000 tons, or 0·9 per cent. Over 28 weeks to July 16 freight traffic declined at the same rate to the extent of 1,285,000 tons, causing the volume of ton-miles to shrink by 197 million, or 2 per cent, while reducing freight, train receipts by £2,868,000, or 2·3 per cent.

During these 28 weeks traffics fluctuated differently in the six Regions. Merchandise was down 460,000 tons, or 7 per cent in the London Midland and up 200,000 tons, nearly 13 per cent in the Southern. The Eastern also carried 159,000 more tons (4·6 per cent), but the Western had a decrease of 86,000 (1·9 per cent). Loadings in Scotland were 68,000 tons up (2·5 per cent) and 56,000 tons higher in the North East (1·7 per cent).

	Four weeks to		Incr. or Decr.	Aggregate for 32 weeks to		Incr. or Decr.
	Aug. 13 1961	Aug. 13 1960		July 16 1961	July 17 1960	
	1961 £000	1960 £000		1961 £000	1960 £000	
Passengers—						
British Railways	16,925	16,971	− 46	97,794	94,430	+ 3,364
London Transport—						
Road passenger services	4,590	4,379	+ 211	36,062	34,760	+ 1,302
Railways	2,153	1,997	+ 156	17,194	15,765	+ 1,429
Provincial & Scottish						
Buses	6,335	6,105	+ 230	40,041	37,943	+ 2,098
Ships	1,552	1,531	+ 21	4,986	4,793	+ 193
Total passengers	31,555	30,983	+ 572	196,077	187,691	+ 8,386
Freight, Parcels & Mails—						
British Railways—						
*Merchandise and livestock	6,787	6,417	+ 370	62,023	61,426	+ 597
*Minerals, etc.	2,714	3,048	− 334	27,788	29,656	− 1,868
*Coal and Coke	6,071	5,584	+ 487	63,595	64,669	− 1,074
*Parcels, etc., by coaching train	4,263	4,192	+ 71	33,995	33,925	+ 70
*Total freight British Railways	19,835	19,241	+ 594	187,401	189,676	− 2,275
†Others	4,651	4,221	+ 430	38,810	35,634	+ 3,176
Total freight, parcels & mails	24,486	23,462	+ 1,024	226,211	225,310	+ 901

*Includes receipts from collection and delivery, etc.
†Receipts from railway movements wholly within dock areas, included in previous periods under "Freight, Parcels and Mails," are now classified as miscellaneous.

PERCENTAGE VARIATION 1961 COMPARED WITH 1960

	Four weeks to August 13	32 weeks to August 13
British Railways—		
Passengers	− 0.2	+ 3.5
Parcels	+ 1.6	—
Merchandise & livestock	+ 5.7	+ 9.6
Minerals	− 10.9	− 6.2
Coal & Coke	+ 8.7	− 1.6
Total	+ 2.3	+ 1.6
Ships (passengers)	+ 1.3	+ 4.0
British Road Services, Inland Waterways & Ships (cargo)	+ 10.0	+ 8.8
Passenger Road Transport, Provincial & Scottish	+ 3.7	+ 5.5
London Transport—		
Railways	+ 7.8	+ 9.0
Road Services	+ 4.8	+ 3.7
Total	+ 5.7	+ 5.4
Aggregate	+ 2.9	+ 2.2

Over the whole system, mineral forwardings totalled 31,527,000 tons, a decrease of 594,000 tons (1·9 per cent). The London Midland showed a rise of 209,000 tons, nearly 2 per cent, but the other heavy Regions recorded decreases

varying from 1·7 per cent in the North East and 2·1 per cent in the Eastern Region to 9·1 per cent in the Western, which lost 395,000 tons. The railways worked nearly 130 fewer mineral ton-miles, a decrease of 4·9 per cent, the London Midland recording a fall of about 14 million in spite of its larger tonnage. Mineral revenue declined by £1,534,000, or 5·7 per cent. This loss of revenue may go on until the iron and steel industries can work once more at full capacity.

During the 28 weeks under review 22,409,000 tons of coal and coke were put on rail in the North Eastern area, an increase of 639,000 tons (2·9 per cent) and about 27 per cent of the all-line loadings of 80,357,000. The Eastern was the only other Region to have a substantial rise of 221,000 tons (1·5 per cent). Decreases in the other Regions varied from 22,000 tons in Scotland (0·2 per cent) to 1,025,000 in the London Midland. Owing to short hauls the North Eastern accounted for no more than 14 per cent of total coal ton-miles but raised its own output by 27 million, or 4·5 per cent. Total coal ton miles were curtailed by 99 million, or 2·3 per cent, but receipts from coal class traffic were lower by £1,561,000, or 2·6 per cent.

It is a relief to hear that freight train revenue advanced by £523,000, or 3·4 per cent, in the four-week period to August 13, though the latest figures for passenger business are disappointing. In the first six months of the year our railways originated 487,561,000 passenger journeys, a drop of 6,902,000, or 1·4 per cent, from 1960. Takings rose by £3,651,000, or 5·2 per cent. The average first class fare, paid by 660,000 fewer travellers, was 1s. 9d. higher, compared with a rise of 2d. in the average second class fare. The Eastern Region was alone in reporting an increase 1,915,000 passengers (2·3 per cent). The Western lost 2,552,000 (5 per cent), the Southern 2,290,000 (1·1 per cent) and the North Eastern 759,000 (2·9 per cent). In Scotland the railways have not recovered from the failure of electric traction in the Glasgow area. By June 30 passenger carryings this year were down 1,839,000, or 6 per cent. A fifth of the 1960 first class passengers ceased to travel and 1,634,000 second class passengers, 5·5 per cent of last year's number also disappeared. It is significant that in 28 weeks the Scottish Group of Road Passenger Services increased its receipts from ordinary passengers by 4·5 per cent.

LETTERS TO THE EDITOR

THE EDITOR IS NOT RESPONSIBLE FOR THE OPINIONS OF CORRESPONDENTS

SOUTHERN REGION WINTER TIMETABLE

August 21

SIR, We have taken a good deal of trouble to make sure that the general traveller understands precisely why we cannot accelerate the timings of the south eastern division electrics running *via* Ashford until the scheme is complete, and it is disappointing to see that your expert writer has not grasped this point.

I refer to his comment in your August 18 issue on the Southern Region timetable.

With ten months to go before the scheduled completion of the scheme, some of the biggest engineering tasks lie ahead. The electric trains may well need all their recovery powers to maintain the old steam timings in these circumstances.

The accelerated timings would, therefore, be unrealistic, and represent a promise which we would probably be unable to keep. This is precisely the sort of " useful advance publicity " which has a habit of recoiling on one's own head.

Yours faithfully,

F. D. Y. FAULKNER,
Public Relations and Publicity Officer

British Railways,
Southern Region, Waterloo Station

RAILWAYS INTO ROADS

August 20

SIR, Mr. A. I. Watkinson's remarks in your issue of July 28, concerning the bus roadway proposed for Chicago's South-west Expressway require clarification. Rail transport has never been considered for this route, since its traffic potential is so uninspiring. Its alignment, bordered by road, freight and barge terminals, gas works, and wasteland, makes this rather evident. The reserved median is planned for only the outer (low-construction cost) portion of the route, and will come no closer than four miles to Chicago's " Loop " (central business district). Viewed in the light of the latter fact, its capacity to cater to " downtown " commuters is not " colossal " but in fact zero.

One other point to be noticed is that the Chicago Transit Authority who will operate this facility, is studying the feasibility of an electronic guidance system to enable it to run its buses in " trains " over the route rather than as single units. This would entail making up and breaking up the " bus trains " at the ends (and possibly at points intermediate) of the short reserved section. It is felt that the advantages of a fixed path may justify even this awkward arrangement. This, to paraphrase Mr. Watkinson, shows that road wandering transport also leaves much to be desired.

Yours faithfully,

JAMES M. MALONE II

3812, N. Alta Vista Terrace,
Chicago, U.S.A.

August 22

SIR, Mr. Mitchell's ideas for converting certain railways into roads are interesting, but would he elaborate a little more on what he would do with the traffic now passing over the routes. For instance, on certain sections of the Great Central line there are up to 80 freight and 45 passenger trains in one direction only. What would he do with them?

Yours faithfully,

R. T. MUNNS

16, Boundary Road,
St. John's Wood, N.W.8

U.S.S.R. RAILWAYS

August 14

SIR, I remember when I was an apprentice, over 40 years ago, on enquiring what was the purpose of a new machine, being told that it was " a wimwam for grinding smoke." Now from the caption of the illustration on page 107 of your issue of July 28, it seems that the Minister of Railways U.S.S.R., has pulled the same gag.

A machine " for cleaning off electric locomotive chutes." Most interesting; but the photograph shows what appears to be an Atlas-Standard tyre re-profiling machine, or a Russian-built copy of this machine. I understand that the Russians have, in fact, built a copy of the Atlas-Standard machine.

Yours faithfully,

D. H. KEENE, A.M.I.MECH.E.

6, Lawn Heads Avenue,
Littleover, Derby

[As Mr. Keene points out, the machine illustrated appears to be similar to those used by London Transport and other British transport concerns. Nevertheless, in view of the uncertainty, we decided to use the exact words of the caption which had been provided by the Minister of Railways, U.S.S.R.—ED., *R.G.*]

The Scrap Heap

Cross-country

A railway guard chased his train on foot for two miles last night, and was within sight of it as it stood at a station when it pulled out again—with a porter acting as guard.—*From the "Daily Herald," August* 15.

Interlude

The passengers in a suburban train from Wimbledon, which was delayed just outside Waterloo beside the boat train from St. Malo, were entertained by an elderly gentleman wearing dark glasses, who, seeing that they were growing tired of waiting, produced and played a violin. A British Railways spokesman expressed his delight when told of the performance, but said that it was not part of the normal service.

Advance notice

The October, 1961, issue of our U.S.A. contemporary "Railroad", which reached us by surface mail last week, asks why U.S. railroads do not offer camping coach service, and states that British Railways "have 227 camping coaches for rent to vacation parties; these coaches are taken to scenic inland and coastal spots and parked on sidings."

The dangers of brevity

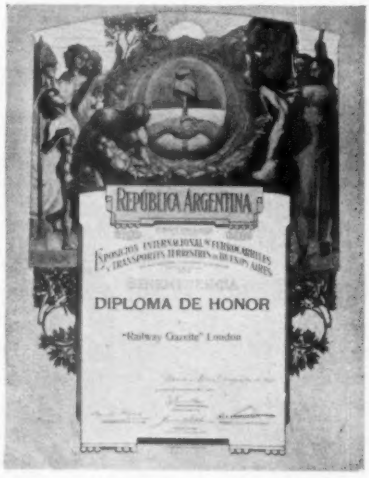
Scientists everywhere nowadays are urged to worship at the shrine of brevity. This is admirable enough in its fashion, but the passion for contraction can be much overdone. The unfortunate foreigner, staring blankly at London Transport Executive's cryptic warning that DOGS MUST BE CARRIED, can be forgiven for wondering where on earth he is going to find one. Nor is his perplexity diminished by a new version that exhorts him to carry both a dog *and* a push-chair.—*Dr. R. Slack, in "Chemistry and Industry."*

Tourist attraction ?

"I have a very precise image of the British railway porter. He is never young and can be as old as Stephenson's Rocket. He has rarely shaved and usually has one or two strategic buttons undone somewhere. He is dressed in a traditional costume which was obviously made second-hand. The boots are modelled on Chaplin's. The waistcoat has accumulated so much grease that it has solidified to the texture of leather. Only in snowstorms is a jacket ever worn. Each porter has a pink, porous, suffering face, a fag-end behind the right ear, and hair so thin that it seems to have been painted on a bald skull. Even Dr. Beeching cannot tell them apart. They are as much part of Olde Englande as beefeaters, foxhunters, barristers in wigs, and businessmen in bowler hats, runaway heiresses, bored sales-girls and bullying Customs officers. I dread to think what will happen to our porters when they have graduated from the new B.R. charm-schools. Handsome, vigorous, talkative, cheerful, smart and energetic—they will look impressive on the travel posters. But who will carry the bags?"—*John Jelley, "Daily Mail," August* 21.

A "Railway Gazette" diploma

Early in 1909 the Argentine Government announced that its plans for the



Diploma awarded to "The Railway Gazette"

centenary celebrations in 1910 would include a railway and land exhibition as a leading feature. At the request of the Argentine Government, the then consulting Editor of *The Railway Gazette* visited Buenos Aires later in 1909, and this journal took an active part in promoting the largest and most comprehensive display of railway plant that had ever been held out of Europe. The exhibition was fully described and illustrated in two special numbers of *The Railway Gazette*. Exactly 50 years ago (in August, 1911) a Diploma of Honour was awarded to *The Railway Gazette*, and was transmitted through the British Government.

£5 if you miss !

Spittoons for Carriages. 11971. July 31, 1890. C. E. Smith, Wednesbury (8d.). The spittoon consists of a funnel-shaped disc, terminating in a short tube, passing through the floor of the carriage, for receiving the saliva, and a curved tube carrying a light vane on its upper side connected to the short tube. The motion of the carriage causes the vane, by action of the air, to turn towards the rear of the train, causing a draught down the tube by which the saliva is rapidly removed. (Accepted May 16, 1891.)—*Abridgement of a patent specification, published in "The Railway Engineer," September issue*, 1891.

First class passenger

Down the entire length of Platform 10 of Kings Cross Station, escorted by a giant policeman, a sweating man carried a 4 ft. x 3 ft. parcel. It was wrapped in brown paper and tied with string. "Look," said a porter, "there goes the Iron Duke." Startled passengers began to follow the little procession of two officials in charge of the mysterious parcel, a red-capped porter, the outsize policeman, and two security men. But it was not the £140,000 missing Goya who went first class, non-smoker in the Heart of Midlothian express. It was the £100,000 St. Peter by El Greco going home to Co. Durham's Bowes Museum in Barnard Castle.—*From the "Daily Express," August* 26.

A Swiss railway and the walker

An unusual enterprise of the Bern-Lötschberg-Simplon Railway has brought a well-deserved reward. One of the most spectacular stretches of the B.L.S. main line is from its emergence into the Rhône Valley at Hohtenn, some 1,600 ft. up the north wall of the latter, and its 12-mile descent, with magnificent views over the mountains of the Valais, until the Simplon line is joined at Brigue. The Lötschberg Company now has made a path, more or less parallel with the railway, from Hohtenn to Lalden, commanding the same prospect throughout its length. Where the railway tunnels through projecting mountain spurs the path has to climb, and there are considerable detours round the deep intervening gorges bridged by the line—incidentally, these feats of engineering can now be seen at close quarters—but all this adds to the interest of the path for walkers. The public response has been so enthusiastic that additional railway tickets issued to and from Hohtenn, Ausserberg, and Lalden have met all the costs of making the path. A similar path is now nearing completion from Kandersteg, high above the Kander Valley, to the upper terminal of the Kiental-Gehrihorn chair-lift, and no doubt will be equally successful.

OVERSEAS RAILWAY AFFAIRS

FROM OUR CORRESPONDENTS

VICTORIA

Construction at Spencer Street

Tenders for the erection of a three-storey passenger terminal at Spencer Street Station will be called shortly. The total cost of construction of the new passenger terminal, re-arrangement of tracks and facilities, construction of platforms, associated works, and subways is estimated at £A1,300,000.

Sydney-Melbourne standard-gauge schedules

The schedules of the three daily passenger standard gauge expresses each way between Sydney and Melbourne will be as follow. Departure and arrival will be at the same times in opposite directions for both south, and north-bound trains.

	Departure	*Arrival*
The Daylight Express ...	7.45 a.m.	9.00 p.m.
The Night Sitting Express	7.00 p.m.	8.35 a.m.
The Night Limited Express	8.15 p.m.	9.15 a.m.

A through carriage between Melbourne and Canberra in each direction will be attached to the Night Sitting Express. There are expected to be seven goods trains daily, three fast goods, one fruit express, two steel-products expresses and one slow goods to include four-wheel vehicles and running at a maximum speed of 40 m.p.h.

Railway-built standard-gauge wagons

Thirty 50-ton wagons are being constructed by the Victorian Railways for use on the standard-gauge link with New South Wales. They will be used mainly for heavy steel traffic between Queensland, New South Wales and Melbourne. They are fitted with high-speed bogies having the latest brake-gear allowing heavy trains to be controlled at higher speeds on long steep gradients.

NEW ZEALAND

Higher fares and line closures

The New Zealand Minister of Railways has announced increases in railway suburban fares which are expected to bring in £250,000 annually in revenue. He emphasised that long-distance fares would not be affected. The Minister has also announced the closing of nine uneconomic branch lines, most of them in the South Island. He added that the staff gained by closing the branch lines would not solve the railway staff shortage.

Movement of drilling clay

Four special and four normally-scheduled goods trains were run recently from the port of Napier to convey a shipload of special barytes drilling clay received from Australia. The 1,775 tons of barytes were conveyed in trains of 15 to 20 wagons hauled by "Ab" and "J" class steam locomotives with scheduled loadings of 280 and 340 tons respectively.

Diesel locomotive under test

In the Hawke's Bay area one of the new 78-ton 1,425-h.p. American-built "DA" diesels was tested under load on the 1-in-46 Opapa bank. From a dead

LAUNCHING OF NEW BRIDGE IN RHODESIA

Launching of new bridge over the Shangani river, showing a 15th Class Garratt locomotive crossing the old bridge

stop the "DA" hauled a 399-ton load at a steady 15 m.p.h. up the gradient. In a second test, a "KA" steam locomotive was coupled "dead" into the train, making a total load of 550 tons. After a promising start the diesel soon began to make heavy weather of the gradient, eventually almost coming to a stop on the wet rails. The regulator of the steam engine was then opened and the train steadily picked up speed.

INDIA

Distribution of Third-Plan allocations

The latest provisional allocation in the Third Plan, Rs. 1,325 crores (£994 million), is to be distributed: Rs. 510 crores for rolling stock, and for new lines and track renewals Rs. 317 crores (£238 million). The latter sum is expected to be allocated largely to the construction of iron-ore and coal lines in Bengal and Bihar and also in South India, presumably the new lines to feed the port of Vizianagram. Global tenders have been invited for the supply and erection of equipment for the 82-mile metre-gauge extension of Southern Railway electrification from Tambaram to Villupuram, estimated to cost Rs. 3·4 crores (£2·55 million). The whole of the Tatanagar-Burupur–Durgapur area in the West Bengal iron and coal area was expected to be electrified by the end of July.

It is now stated that the Indian locomotive-building industry including Government workshops is in a position to tender for overseas steam locomotive supplies.

Developments at Chittaranjan

A steel foundry with a capacity of 7,000–10,000 tons of finished castings a year is being constructed at Chittaranjan Locomotive Works. It will produce not only the castings required for locomotives and rolling-stock but also those in manganese steel for permanent-way crossings and for other purposes. A saving of some £262,500 of foreign currency has already been secured by the galvanising of some 9,000 tons of steelwork, largely required for electrification overhead transmission masts and other parts, at the Chittaranjan galvanising plant.

Increase in Indian mineral output

The rising trend in India's mineral production, evident since 1955, continued during 1960 and represented an increase of nearly 13 per cent over the previous year. The rise was mainly in the output of coal, iron ore, bauxite, copper ore, china clay, dolomite, limestone and salt. Coal output at 52·6 million metric tons (against 46·07 million metric tons) was valued at 68 per cent of the total value of mineral production.

EAST AFRICAN SLEEPER

Second-class three-berth sleeper built for East African Railways & Harbours

PUBLICATIONS RECEIVED

Products and Activities. This booklet, issued by the George Cohen 600 Group Limited, Wood Lane, London, W.12, gives an outline of the scope of the 36 companies constituting the group. The group's activities are widely spread in the engineering world and include many associated with railways.

Carbon and its Uses. This is the second issue of a well-produced publication, issued by Morganite Carbon Limited, of Battersea Church Road, London, S.W.11. It contains a number of illustrated articles on the applications of carbon, including one on the Company's contribution to equipment on the "Midland Pullman."

Arc Welding. Associated Electrical Industries Limited has issued "The AEI Arc Welding Guide"—which replaces previous Metrovick Electrode Guides. In addition to the latest data on the wide range of AEI welding electrodes, this enlarged booklet contains a considerable amount of technical information on welding, providing a comprehensive guide for the welding fabricator. Included in the new sections are a complete list of British Standard Specifications relating to welding processes and applications, notes on the care of electrodes, and a brief list of AEI arc-welding plant. Copies of this publication, number 1891-71, may be obtained free from Associated Electrical Industries Limited, Heating and Welding Department, Trafford Park, Manchester 17, or any AEI District Office.

Industrial Eye Protection. Catalogue T.61, issued by Optoshields Limited, 146 Clerkenwell Road, London, E.C.1, contains particulars of industrial goggles, spectacles, and face shields. These range from simple lenses to welding helmets. Included in the catalogue is a list of spares, replacements, and accessories.

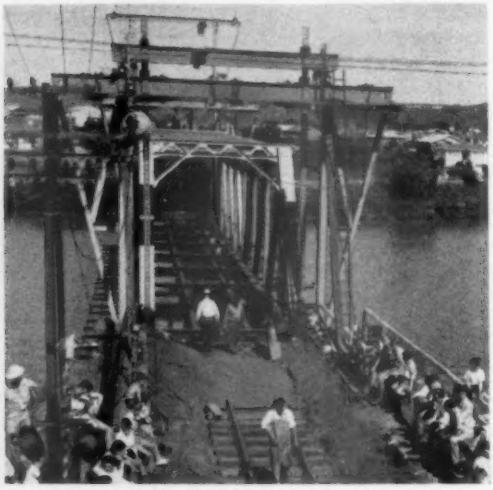
Six Years of Progress. A sixteen-page booklet issued by British Transport Waterways, describes the progress of maintenance, modernisation and development of Britain's waterways since the inception of the undertaking in 1954. Descriptions of volume and methods of freight carryings and of pleasure boating are also included.

A.D.A. Members and Products. The Aluminium Development Association has issued a new directory of members. This publication is now divided into two parts, the first being an index of products, where a user of aluminium requiring it in a particular form is given the names of companies supplying it in that form. Reference to the second part gives the particulars of the company concerned and lists all its products. Copies of the directory and index are available free to bona-fide enquirers on application to the Association at 33 Grosvenor Street, London, W.1.

Zwicky Filters. A booklet issued by the Filter Division, Zwicky Limited, Buckingham Avenue, Slough, Bucks, describing Uniplex and Biplex filters. In addition to a full description of the design features and construction of these filters, the contents include illustrations, tables of dimensions and specifications. A graph records pressure drop for fluids of various viscosities.

Channel Underground. A survey of the Channel Tunnel question, by Deryck Abel: The Pall Mall Press, London & Dunmow. 8½ in. x 5½ in., 127 pp. illustrated. Price 17s. 6d. The foreword by Sir Ivone Kirkpatrick advocates building a tunnel to carry by rail not only passenger road vehicles but also freight, and explains that this is not a propagandist book, but strictly factual. The history of the scheme is given in some detail, and two chapters are devoted to geology and engineering.

Lowering complete with span in final position



Span almost lowered on bearings

WANGANUI BRIDGE reconstructed

Four 120-ft. truss spans on railway bridge in New Zealand renewed by an unusual method

THE Wellington-Palmerston North-New Plymouth line of the New Zealand Government Railways crosses the Wanganui River near the important town of that name. The bridge, as constructed and until now in use, has been 600 ft. long and has consisted of five 120-ft. lattice-type timber through truss spans.

The superstructure is being entirely replaced by four 120-ft. steel through truss spans of the Warren-girder type with verticals and two 60-ft. through plate-girder spans.

Line occupation reduced

As the work has to be done under traffic it was evident that line-occupation must be reduced to a minimum. In other words, the actual truss replacement had to be carried out at week-ends, when a maximum period of possession is 36 hr. To meet this condition an unusual method of replacement was devised.

The procedure followed was for the four new western 120-ft. steel spans to be fabricated in the Railway Department's workshops at Hutt and the parts subsequently railed to the bridge site. Those for the westernmost span were first assembled on temporary decking resting on the top chords of the old timber westernmost trusses. This work was carried out with the aid of a light erection gantry crane on the top-chord decking.

Meanwhile, two heavy gantries had been erected, one on the abutment, and the other on the tops of the cylinders forming the nearest pier. These gantries, astride the ends of the old girders and also the new ones resting on them, had their cross-girders of such a height that the outer or lower ends of the portal members of the new spans could be lifted by them. These girders were fitted with jacks having lowering posts extending upward to a height just greater than that of the old girders.

Spans lowered by jacks

Before the change-over from the old to the new span, the track and decking of the old one was removed, thus reducing its 130-ton weight by nearly half. Then the old span was fastened to the bottom members of the new one enabling it to be slung from it. Finally, the weight of both spans was taken by the gantry jacks, one at each corner, and the end members of the timber trusses were cut

Western span erected complete on old timber-truss span

Timber span suspended from steel span

away to clear the abutment and pier, leaving them suspended from the new span and held up by the jacks. The two spans were together then lowered with the jacks until the new girder bearings rested on the abutment and pier. The setting of the bedplates for the new trusses took nearly 8 hr. to set before the new span could finally be seated. As the new span was complete with stringers only the laying of the track was required to place the new span in service.

The other 120-ft. spans have been or are being similarly renewed, the jacking gantries being moved along as required span by span. Plans are also complete for the alterations of the eastern end of the bridge.

INTERCHANGE MARSHALLING YARD at Leighton, Western Australia

Layout, construction works, signalling and interlocking installations

BIG increases in cargoes handled at the Port of Fremantle in recent years have caused greater rail and road traffic, especially in the North Wharf area, and it became necessary to provide entirely new marshalling yard facilities for interchange wharf traffic.

Overall planning for the future of the harbour, grain-storage and railway development in the port area has necessitated the construction of a marshalling yard in an area clear of the wharf, but with adequate access to the main Fremantle-Perth railway and bulk grain silos as well as the waterfront. The site chosen was between the main line near Leighton Station, and Leighton Beach.

General layout

The yard comprises three "grids"; one for arrival of up trains from Midland Junction and Perth *via* the Cottesloe access track, one for the shunting of inwards and outwards grain- and oil-tanker traffic and one for the reception of trains from Fremantle or North Fremantle as well as classification and preparation of main-line trains.

The second or "ocean-side" grid handles only traffic moving to or from the Harbour Trust area, or private sidings within that area, and therefore forms part of the trust's own rail network; both land and permanent way are owned by that body although all operations are carried out by the Western Australia Government Railway. The arrival grid handles both wharf and other traffic and is jointly owned by both organisations; the third or "eastern-side" grid is a purely W.A.G.R. concern. The whole of the yard is operated as one entity with a stud of locomotives engaged on shunting and transfer work.

Access lines

In addition to the tracks of the marshalling yard, access lines from the wharf, North Fremantle station yard and the main line at the Perth end were necessary. From North Fremantle through up and down roads leading directly to the hump were constructed with a third track, also serving as a shunting neck for several private sidings, leading to the W.A.G.R. grid. From the western end of North Wharf another access line runs into the Harbour Trust grid, and for most of its length this is paralleled by another road linking the grain storage facilities with the marshalling yard.

Construction of the third access line involved considerable engineering works, as the marshalling yard is on a much lower level than the main line and grading requirements were such that it was necessary to connect the new siding layout to the main line at Cottesloe, 1½ miles from the extremity of the new yard, where an interlocked station with yard facilities already existed. This connecting line involved a 30-ft.-deep cutting in limestone, alterations at Mosman Park station, three level crossings equipped with flashing-light signals and rebuilding a pedestrian overbridge. It is equipped with automatic searchlight signals controlled from Cottesloe.

Cottesloe Yard re-modelled

To handle the longer trains and to permit easy diversion, it was necessary to remodel Cottesloe Yard and construct a signal cabin in a central position on the island platform. This involved demolishing the existing passenger facilities and incorporating them with the signalbox in a new building.

The work involved the handling of approximately 200,000 cu. yd. of earthworks, including in the vicinity, 40,000 cu. yd. of limestone excavation and the levelling and distribution of beach sand dunes. Generally the limestone was easy working, but hard capstone and nodules were encountered necessitating heavy ripping. The work was performed under contract with the aid of a 24-cu. yd. Euclid self-propelled scraper, augmented by bulldozers, and graders from time to time.

The connecting-line cutting was 10½ ch. long and varied up to a maximum depth of 34 ft. On the main-line side a batter of 1 to 1 was adopted, but on the seaward side land restrictions necessitated a batter of ½ to 1. A bottom width of 22 ft. was maintained in all single-line cuttings.

All fill in the general yard area composed of beach sand was blended with a 3-in. layer of limestone to prevent wind erosion, and as a further precaution various grass seeds were sown on advice from the Agricultural Department.

In all 10 m. 41 ch. of track were laid and 43 sets of single points and crossings, two tandems and one diamond were provided. Cottesloe station yard was completely remodelled to facilitate entrance to the connecting line and ensure ease of working.

Basically the yards were laid with cropped and welded 75-ft. lengths of secondhand 60-lb. rail, but the connecting line from Cottesloe to the arrival grid was laid in 63-lb. new rail welded into 90 ft. lengths. Gravel ballast to a depth of 3 to 4 in. was used on tracks in the marshalling yards and the whole dressed to top-of-sleeper level. The connecting line was ballasted with 6 in. of crushed metal to standard specification.

Cottesloe Signalbox

The new signalbox at Cottesloe is a weatherboard and asbestos building of modern design, built from platform level on the brick walls of the well. Major consideration has been given to space which allows freedom of movement to the signalman and easier accessibility for the maintenance of all lever frame connections.

The site chosen commands an uninterrupted view of the field of control through a wide expanse of glass round the control room. Anti-glare awnings and other features to prevent reflections have been incorporated. Lighting arrangements are designed to avoid flooding and destroying inscriptions, illuminated diagram and shelf indications.

The relay room adjoins the east end of the cabin at the same level as the base-

ment floor. The relays are on wooden shelves and the fuse and terminal panels are suitably located to fit the main cable inlets.

The signal and point controls are conveyed by multi-core Neoprene-sheathed 1/·064 cable conductors laid in concrete trunking for the Fremantle end of the yard as far as the loop points; from there onwards p.v.c. insulated 1/·104 h.d. copper aerial conductors are used. For the Perth end all controls are carried by aerials.

The signalling is mainly mechanical and comprises a 60-lever frame, mechanical semaphore signals, manual points and d.c. track circuits with two exceptions. The Down main-line distant signal is operated by a 12 V. d.c. motor on account of its distance from the signalbox, and the points at the far end of the goods refuge loop on the access line are operated by a 24 V. point machine for similar reasons. All signals controlling entrance to and exit from the line between this refuge loop and the marshalling yard are of the three position semi-automatic searchlight type and are controlled by the signalman at Cottesloe; directives for train movements are obtained by telephone communication with the yard foreman at Leighton and Train Control, Perth. In the event of a failure of the departure signals, pilot-key working is instituted in this section.

Illuminated control diagram

The lever frame is surmounted by an illuminated diagram which indicates all track-circuit sections. Colour-light signal aspects and the normal and reverse position of power points are indicated by luminous shelf indicators. The combination of a mechanically interlocked signal installation and electric track circuits and colour-light signals, etc., is fully protected by electric lever locks, relays and time-releases in addition to the rotary and tappet locking of the lever frame.

Safe working on main lines

Safe working on the double-track main lines continues to be effected by means of Sykes' lock-and-block instruments with block signal cabins in this area at North Fremantle, Leighton passenger station, Mosman Park and Cottesloe. Telephones connected to the P.A.B.X. railway network are installed at all main locations. The power supply provided for the signal cabin and all signal locations consists of 250 V. a.c./12 V. d.c. or 110 V. a.c./12 V. d.c. rectifier sets, with two banks of 6 V. lead acid accumulators as a stand by.

For yard communications walkie-talkie radio sets are proving invaluable. Their use is, however, limited by the range of operation and other geographical conditions effecting good reception; as an alternative, portable telephones are used.

EVENING TRAVEL QUESTIONNAIRE

Underground travellers using cheap evening return tickets (" Certs ") last week were asked to help the London Transport Executive by filling in a six-point anonymous travel questionnaire card. The card, distributed at one station in three, asked whether passengers were travelling alone or with other people, the purpose and frequency of their evening journeys, and their age group. Forty thousand cheap evening tickets are sold on the Underground every week. The survey began on August 22.

PLASTICS ON OVERSEAS RAILWAYS

Warerite used on passenger coaches for Sierra Leone and North Borneo

Interior of power car for North Borneo

WARERITE has been used in diesel railcars ordered from D. Wickham & Co. Ltd. by the North Borneo Transport Authority. Buff Warerite veneer has been used to panel the walls of the first, second, and third class coaches, and Warerite ivory veneer bonded to aluminium for the ceilings.

The Gloucester Railway Carriage & Wagon Co. Ltd. has built 45 passenger coaches for the Sierra Leone Railways and in these too Warerite has been used. First class coaches have been panelled with Warerite maple veneer. In this stock, colours used were grey for second class and stardust blue for third class.

The ceilings in all passenger coaches are decorated with Warerite ivory. The Piccadilly pattern has been used in mail and baggage vans.

First class passenger coach for Sierra Leone Railways

PULLMAN CARS FOR BRITISH RAILWAYS, North Eastern Region

Modification to contemporary standards permits traditional features to be retained

IN THEIR programme of replacing many of the older Pullman cars operating on British Railways, the Pullman Car Co. Ltd. ordered 44 new coaches from the Metropolitan - Cammell Carriage & Wagon Co. Ltd.; these are now assigned to the North Eastern Region of British Railways.

Modifications

Although the new coaches are contemporary they still retain a dignified style. In achieving this the Pullman Car Company enlisted the services of Mr. John Carter, M.S.I.A., who has been largely responsible for interior styling and colours.

Smooth travel has been obtained by the use of a special type of bogie, incorporating a mono-block cast-steel frame and using Timken roller bearings and axleboxes.

An increase of 12 in.—from 4 ft. to 5 ft.—in the double-glazed windows allows passengers to see more from their armchairs. These armchairs, a Pullman tradition, have been retained, but thoroughly modernised in contour and springing, and upholstered in special moquette to match the interior decorating schemes. The folkweave curtains and patterned Wilton carpets blend successfully with the main colour schemes.

Among special features of the coaches are first class coupés, seating four. There is a fan to assist ventilation, and a loudspeaker installation which can be used for a public address system. In producing these new cars the demands of standardisation had to be met, and they were built with the same contours and structural features as British Railways passenger stock.

Type C second class kitchen car

The exteriors are painted in the traditional Pullman colouring of umber and cream, and display the new coat of arms.

The principal dimensions are: length over vestibule ends, 64 ft. 6 in.; length over body ends, 57 ft. 9½ in.; length over bogie centres, 46 ft. 6 in.; length over bogie wheel base, 8 ft. 6 in.; maximum width of body over panels, 9 ft. 0 in. There are 15 Second Class Kitchen Cars and seven Second Class Parlour Cars.

The cars are equipped with the Stone's pressure ventilating and heating system. This apparatus delivers fresh air drawn from outside the car, which is heated by passing over steam ducts or electric heating elements. The temperature of the air is thermostatically controlled; it is delivered at low pressure through slots at floor level and is extracted through the sliding ventilators. If these are closed it passes through an aperture which surrounds the frame containing the ceiling light panels.

Lighting

The main lighting of the saloons is by fluorescent tubes; the main supply is by the normal 24-32V. train-lighting generators and batteries, and is stepped up by transistor invertors to 80V. 4½kc., with a starting circuit suitable for fluorescent tubes.

The ceiling-light panels consist of an aluminium frame with translucent corrugated Perspex. Each panel is 4 ft. x 2 ft.

Galley with stainless steel sinks

8 in., and is lit by one fluorescent tube of the de luxe warm white type. Although there are only eight or nine such panels in the whole of the car the general lighting is extremely good giving an intensity of 15 ft. candles at table level. In addition, ordinary Tungsten lighting is provided by lamps situated under the luggage racks, on the partitions, and at the tables themselves. The main lighting in the kitchens and pantries is also by fluorescent tube.

Special attention has been given to the layout and fittings of the toilet compartments and a new style of basin has been developed. The walls are lined with laminated plastic panelling with contrasting colours on the doors, and the floors are in grey/green.

Luggage amenities

Luggage racks run the length of the saloon and these have been the subject of considerable thought in order to make them a feature of the interior. They are "semi-solid" Lanide covered with an open grille in alternating sections. The rack is designed with two levels, the upper main rack for luggage and below a smaller rack for lighter articles.

The outer end of the tables stands away from the bodyside by 3 ft. In this space a rack is provided for papers and magazines.

Where there are two chairs abreast—in coupes—a special design of folding flap for tables has been evolved; each passenger has an individual flap, which, when not required, can be folded under the table, giving more leg room and space. A table can be prepared for a meal complete with cloth and cutlery, with the flaps folded under the table. This gives easier access to passengers occupying seats near the window.

The traditional Pullman seating has been maintained. In the first class there are movable arm chairs, and in the second class fixed seating is provided two abreast on one side, and single on the other.

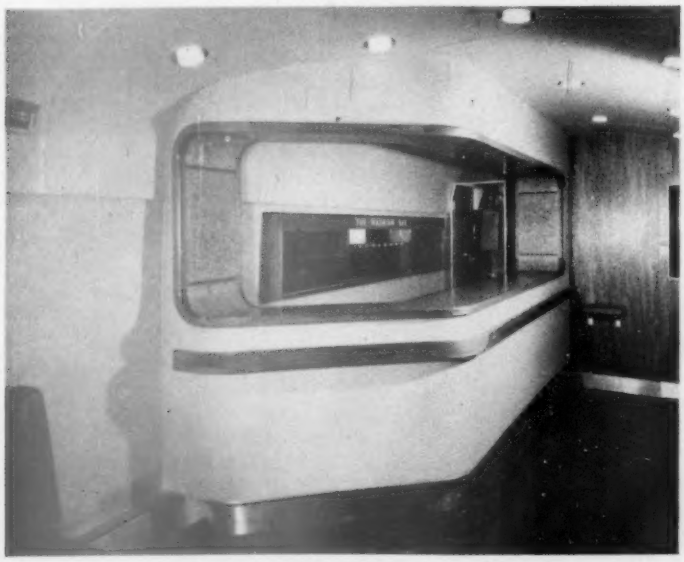
Type D first class parlour car

Décor

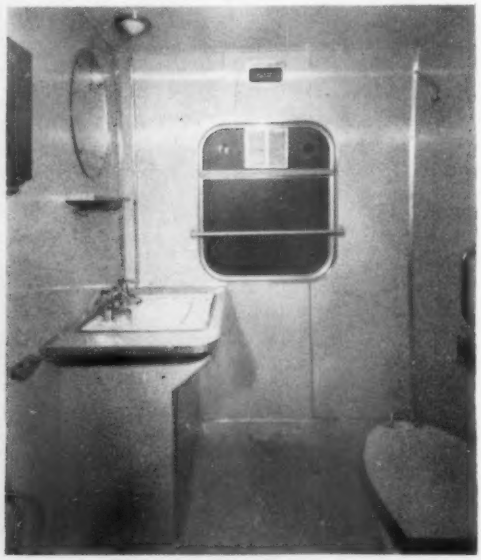
Four different schemes of décor have been adopted, two for the first class cars and two for the second class.

One first class scheme has ceilings in french grey using either Lanide or Warerite Finaweave with a black line. Luggage racks are finished to match. Partitions are in polished Rio Rosewood and table tops covered in black Lanide. Chairs are upholstered in orange and black moquette and the patterned Wilton carpet has a serrated line of black, charcoal, and light grey. Curtains are of folkweave with bright colours to tone. The other scheme in the first class has ceilings covered with Lanide light-tan colour or Warerite-buff with a fine black line. Luggage racks and curtain pelmets are covered in Lanide to tone with partitions, which are in polished Rio Rosewood, with table tops in Lanide Sirocco 29. In this scheme the chairs are upholstered with a bronze-green and black moquette and the patterned Wilton carpet has a serrated line of black, bronze-green, and light grey. Curtains are of folkweave material boldly patterned to tone with this scheme.

Second class parlour cars have ceilings covered in special Warerite grey finaweave with black lines. The luggage racks are covered in Lanide french grey and the body walls are in special Warerite grey. The partition-end doors are in polished Siamese teak veneer, and table tops are of Warerite " terracotta." The floors are



Type F " Hadrian " second class bar



Toilet in bar car

covered in lino with a charcoal background and the aisles between the tables are furnished with a serrated-design Wilton carpet. Curtains again are of folkweave material in gay colours.

The ceilings of second class kitchen cars are covered in Warerite dove-grey as are the body walls. The luggage racks are covered in Lanide french grey and the partitions and partition doors are in polished English walnut. Table tops are covered in Warerite fresco blue. The upholstery is in blue or green ribbed moquette. Aisle carpets are woven to suit.

Fittings and partitions

All the metal fittings are finished to anodised-aluminium matt, except in toilets and kitchens where the finish is of polished chromium plate.

The partitions, which in the usual Pullman practice divide the main saloon into two portions, are solid from floor to waist rail in the new cars. From the waist rail to the ceiling the partition is of toughened glass, enhancing the spacious appearance of the interiors.

The body walls and shelving in the kitchens and pantries are lined throughout in light grey Formica. Kitchen sinks and sterilisers are in stainless steel, and the stoves have been developed by Radiation Limited, in conjunction with the Pullman Car Company. Propane gas is used and modern ideas have been introduced to assist in production of grills.

INDUSTRIAL SHUNTING LOCOMOTIVES with torque-converter transmission

Fowler range extended by two models powered with B.U.T engines

THE range of diesel shunting locomotives built by John Fowler & Co. (Leeds) Ltd. has recently been extended to include an 0-4-0 and an 0-6-0 model with torque-converter transmission. These are available for gauges of from one metre to 5 ft. 6 in. The 0-4-0 locomotive weighs 28 tons and is powered by the B.U.T./Leyland engine rated at 203 b.h.p. at 1,800 r.p.m.

Leading particulars are as follow:—

Overall length	21 ft. 2 in.
Overall height	11 ft. 7 in.
Overall width	8 ft. 6 in.
Wheelbase	5 ft. 6 in.
Wheel diameter	3 ft. 6 in.
Minimum curve negotiable	60 ft.
Tractive effort starting	18,000 lb.
" " 5 m.p.h.	9,300 lb.
" " 10 m.p.h.	5,000 lb.
" " 15 m.p.h.	1,500 lb.
Fuel tank capacity	100 gal.

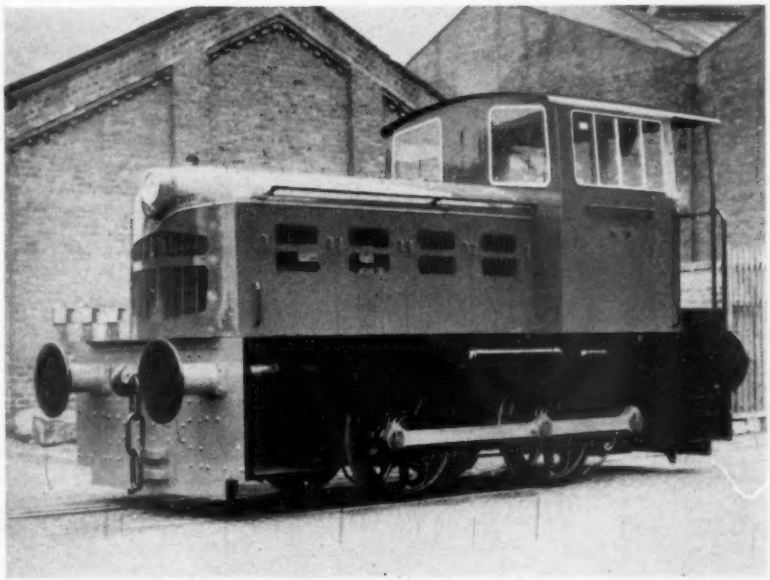
On level track the locomotive will haul, under n.t.p. conditions, 750 tons at 5 m.p.h., 390 tons at 10 m.p.h., or 100 tons at 15 m.p.h.

Three-stage torque-converter

Power is transmitted through a British twin-disc 10,000-series three-stage torque converter, incorporating a twin-plate overcentre clutch for disconnecting the engine from the converter when starting the engine or operating the reverse gear. Operation of the clutch is by an automatically-controlled air cylinder and driving the locomotive is reduced to throttle and brake-lever operation. The converter fluid is engine fuel oil and this is cooled by a heat exchanger connected in the engine-cooling circuit.

From the torque converter the drive is taken by a Layrub cardan shaft to a Wiseman final-drive reverse/reduction gearbox. The reverse gearing is of the spiral-bevel type, followed by spur reduction gearing to the jackshaft. Split flycranks, keyed and clamped to the jackshaft, drive the rail wheels through connecting and coupling rods.

The power unit is the B.U.T. vertical six-cylinder direct-injection engine type U.E.902 having a 12-hour continuous rating of 203 b.h.p. at 1,800 r.p.m. The bore and stroke are 5½ in. x 6½ in. and the swept volume 926 cu. in. Pre-finished wet liners are fitted and the fully-balanced crankshaft is provided with a viscous-type torsional vibration damper. The mechanical all-speed governor is integral with the fuel-injection pump.



Fowler 0-4-0 *shunter with torque-converter transmission*

Heated cab

Good visibility is provided by the large safety-glass windows of the totally-enclosed cab. Sliding windows are fitted in the sides and electric wipers are fitted to the front and rear screens. A cab heater is provided and the two tool lockers are used as occasional seats. Removable doors extend along the full length of the engine casing at each side and these, together with the wide walkways, provide good access for servicing and maintenance. The fuel tank is mounted in the roof of the engine casing, forward of the windscreen. Cooling is by a radiator at the leading end, the fan being belt-driven from the front end of the crankshaft.

The main frame is a riveted and bolted assembly of heavy side plates, buffer beams, and rolled-steel angles. Large bronze bearing surfaces are incorporated

Continued on page 252

RE-SIGNALLING AT LENHAM, British Railways, Southern Region

New signalbox with electro-mechanical lever frame necessitated by line-capacity works

THE electrification of the main line to Folkestone and Dover via Tonbridge and Ashford is being followed by that of the Maidstone East-Ashford, and Ashford-Minster lines, both due for completion by early October.

The Swanley-Maidstone East-Ashford line is used as an alternative route for boat trains. To increase the line capacity and provide paths for these and other through trains, passenger loops are being provided at Otford (Up), Wrotham (Down) and Lenham (Up and Down), while at Maidstone East the existing middle siding is being converted to a reversible line.

Modern architecture

At Otford and Wrotham, the additional signalling can be operated from the existing signalboxes, but at Lenham it was necessary to build a new signalbox which came into operation on July 23. As the illustration shows, it is of the modern type of signalbox architecture, including the latest amenities for the signalman. Externally, a row of "sunbreaker" screens above the windows guard against dazzle from the sun, while the exterior panelling below the windows is light blue in colour. Internal fluorescent strip lighting in the ceiling is controlled by a rotary switch to give two different degrees of lighting.

The illustration shows clearly the contrast between the old and new types of signalbox. The old box has now been demolished.

The signalbox houses a new electro-mechanical lever frame. All points are mechanically operated, with the exception of the points leading to the new down loop which are operated by 120V. d.c. point machines (rectifier fed). Electrical detection and indication is provided as necessary.

The distant signals and section signals are 2-aspect colour light (Y.G. or R.G.), the former being powered by rectifier charged accumulator batteries. The remaining running and shunt signals are semaphore, mechanically operated.

Track-circuiting is of the 50-cycle a.c. conventional capacitor-fed type, single-rail through points and crossings, or double-rail using impedance bonds, to enable traction cross bonding to be provided on the average at every 440 yd. The track circuits are indicated on the miniature illuminated diagram. Complete track circuiting extends from the berth track circuit in the rear of the home signal to 100 yd. beyond the section signal. The track circuit and other electrical controls are effected by equipping the relevant point and signal levers with 110V. a.c. combined lever lock and circuit controllers.

Sequential locking

Sequential locking is provided, and block working with adjacent signalboxes is by one-wire two-position SYX lock and block instruments. The occupation and clearance of the relevant track circuits are necessary before the SYX plunger locks and associated backlocks of the home signal levers can be released. home and distant signal proving is also included.

Signal post telephones are connected on separate circuits to a telephone concentrator in such a way that the signalman can identify from which signal the call originates. Other telephones communicating with the adjacent signalboxes, traffic and electric traction control rooms are provided.

Relays

The relay room which forms part of the under portion of the signalbox, houses all the relays, racking, power equipment and cable terminations. Plug-in type signalling relays with removable connections have been used, employing 16/·012 in. p.c.p. insulated wire. Relays that are operated from an external source are operated by 110V. a.c. rectified to 50V. d.c., whilst those fed solely through internal circuits are operated by 50V. d.c.

Power supply for signalling is taken from the Lenham traction substation at 415V. 50 cycles a.c. and distributed as necessary.

The cables, which are laid in surface troughing, are of three types: main multicore cables p.c.p. insulated and sheathed; power distribution cables, lead sheathed, paper insulated and armoured; signal telephone cables p.v.c. sheathed and polythene insulated.

The work of installation was carried out by the staff of the Chief Signal & Telecommunications Engineer, Mr. J. F. H. Tyler, and the principal contractors for the supply of equipment were:—

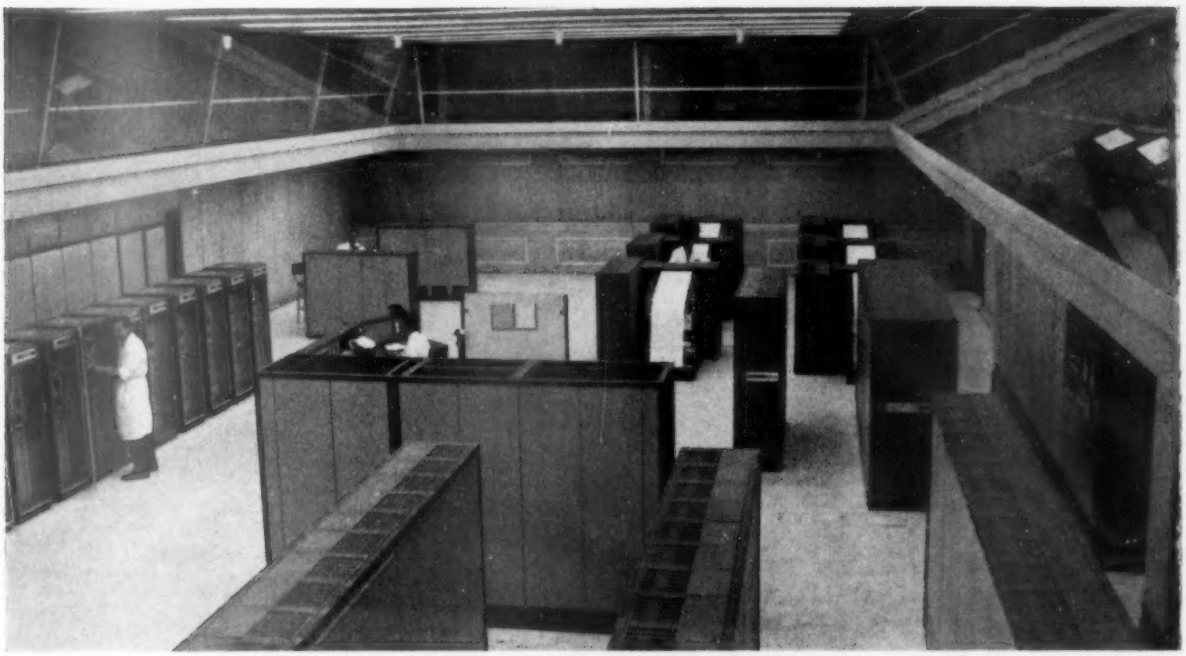
Mechanical lever frame ...	Butterworth & Dickinson Limited
Track circuit equipment, lever locks and circuit controllers, relays and relay racks, power point equipment	S.G.E. (Signals) Limited

The new signalbox at Lenham, British Railways, Southern Region

Industrial shunting locomotives

(*Concluded from page* 251)

in the cast-steel horn guides. Gunmetal bushes are used in the cast-steel axleboxes and suspension is by laminated springs anchored to adjustable hangers. The wheel centres are of cast-steel and fitted with rolled-steel tyres. The Westinghouse straight air-brakes operate one cast-iron shoe on each wheel through fully compensated rigging. Sanding is provided for each direction of travel. Head and taillamps are selected automatically.



General view of S.N.C.F. "Gamma 60" installation in Paris

DATA-PROCESSING EQUIPMENT on the S.N.C.F.

Electronic data processing to replace mechanically-operated equipment

UNTIL recent years, the most highly-developed method of data processing was by machines operating on mechanical principles and based on the use of punched cards for the storage of coded information. The Société Nationale des Chemins de fer Français at present operates 12 offices equipped with such machines, all in Paris, which handle some 200 million punched cards a year.

After studying electronic data-processing equipment and its applications for several years, the S.N.C.F. embarked upon a widespread international enquiry, for the purchase of one of these machines, in 1957. Its final choice was a proposition made by the Bull Machine Company from whom a Gamma 60 was ordered. This machine, of French conception and design, was delivered to the S.N.C.F. at the end of 1960.

Basic make-up

In accordance with the basic make-up of electronic data-processing equipment, it comprises memory elements, computing elements, and communication elements for the input and output of data.

It comprises essentially a "rapid memory," which is the essential station for all data arriving from, or being despatched to, all the other elements, and which stores at any instant the instructions to be given to the elements and the data on which they work. The rapid memory consists of planes of toroids in ferrite. The toroid is a ring (1 mm. thick and 1 mm. in diameter) of magnetic material. The direction of the magnetisation defines the binary character (0 or 1) recorded on it. The machine only has to "read" the direction of magnetisation to know what coded information is stored on the toroid. The 24 toroids situated in the same vertical, serve for the recording of a catena which is the elementary unit of information used in the internal transfers in the machine. Four binary positions are required to represent a digit, six for a letter. The time required to introduce a catena into the rapid memory, or to extract it, is ten microseconds. The memory has a capacity of 393,216 binary positions, that is 98,304 digits or 65,536 letters. Memory elements, as distinct from the rapid memory, having a very great storage capacity are included.

There are two magnetic drums, on which 204,800 letters or 307,200 digits can be inscribed. They rotate at 3,000 r.p.m., at which speed a binary character can be read or inscribed in an average time of 10 milliseconds.

Use of magnetic tape

There are also 18 unwinding reels for magnetic tapes which unwind the tape at a linear speed of 1·90 metres per sec. A catena is read or inscribed in about 266 microseconds. The tape, consisting of a plastic base coated with magnetic oxide, is delivered in reels of either 730 or 1,100 metres. On 1,100 metres of tape 7,200,000 letters or 10 million digits can be recorded.

Magnetic drums and magnetic tapes, besides being storage elements, are also the elements for the input and output of data.

Control desk with magnetic tape reels in background

Computing elements include an arithmetical computer (addition or subtraction in 100 microseconds, multiplication in 250 microseconds and division in 420 microseconds) and a logical computer.

The data input and output elements are two card-punching and reading elements with a total capacity of 600 cards per minute, and six printing elements with a total capacity of 1,800 lines per minute.

The elements enumerated are not the maximum possible. In particular, provision has been made for extending the input-output elements and the magnetic drums. Further, only a few days are required to double the capacity of the central memory.

Installation of the Gamma 60

The machine and its ancillaries are situated in a building in the immediate vicinity of the Gare d'Auteuil-Boulogne at the Porte d'Auteuil. The Gamma 60 is in a room occupying an area of 360 sq. metres at the centre of the ground floor. It is air-conditioned, the temperature, humidity, and dust removal are automatically controlled, as are also the fire precautions.

The room communicates with a magnetic-tape store having a capacity of about 15,000 reels. The offices and workshops occupy the remainder of the building. The electricity-supply installation, including diesel stand-by sets, and the air-conditioning apparatus are in the basement.

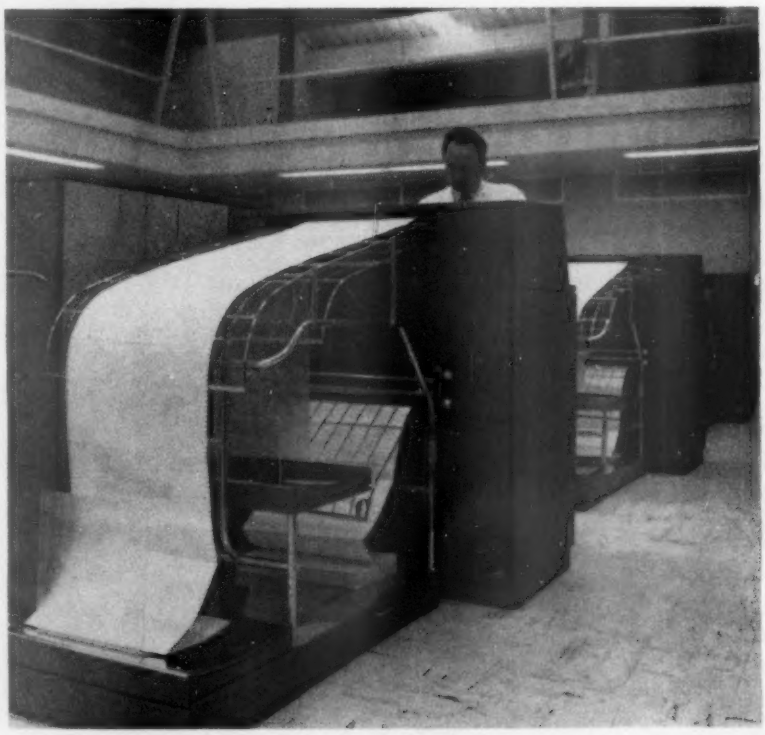
Excluding the research staff, who take no part in the operation, the personnel required for the operation of the machine is not very extensive: one room supervisor, one person at the desk, two controlling the unwinding elements for the magnetic reels, and a variable number attending to the input and output units. Together with the staff carrying out ancillary duties (preparation and conditioning of printed documents) and the maintenance staff, operation by a single team requires about 40 persons.

Applications

With its present capacity, the S.N.C.F. Gamma 60 is already one of the most powerful electronic data-processing equipments in the world. It has a vast field of application. The first work being undertaken covers problems associated with the payment of active staff (nearly 350,000 whose remuneration has been dealt with entirely by the Gamma 60 since April, 1961), social-insurance payments, the despatch of retirement pensions, commercial statistics for the full-wagon load traffic, labour and managerial accountancy, and supply - department ordering.

The future programme includes problems of general accountancy, stock and movement control, and, later on, budgetary control, and cost-price control. The electronic data - processing equipment will then play its full part as an instrument of administration at the General Management level of the S.N.C.F.

The capabilities of the electronic data-processing equipment must lead to a reorganisation of data processing.



One of the six printing elements

PERSONAL

London Transport Executive

MR. T. S. PICK, Chief Electrical Engineer, London Transport Executive, who, as recorded in our August 18 issue, is retiring this month, was educated at St. Peter's School, York, the Royal Military Academy, and University College, London, where he took his B.Sc. degree and diploma in Engineering. He joined the service of the London Electric Railway Company in January, 1923, after spending two years as a student-apprentice with the British Thomson-Houston Co. Ltd., Rugby. His early experience was in the office of MR. ARTHUR R. COOPER, the Chief Engineer, where he gained a knowledge of the engineering aspects of the Underground Group of Companies. From 1926 onwards he was concerned with the preparation and execution of power station reconstruction programmes, and from 1932 with electrotechnical development work within the department. He was appointed Technical Investigation Officer (Electrical) in 1939, Substation Engineer in 1945 and Electrical Engineer in 1948. He was promoted to be Chief Electrical Engineer in June, 1953.

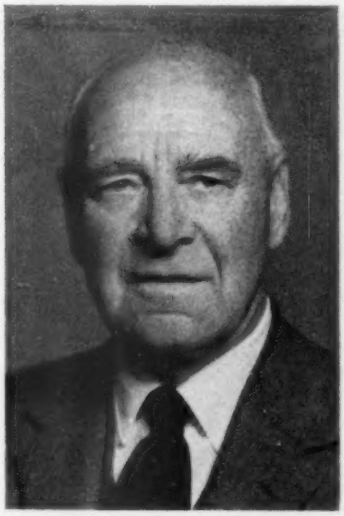
Mr. T. S. Pick

MR. L. A. M. GINGER, Assistant Chief Electrical Engineer, London Transport Executive, who, as recorded in our August 18 issue, has been appointed Chief Electrical Engineer, received his education at the City of London School, the Regent Street Polytechnic, London, and with the British Thomson-Houston Co. Ltd., of Rugby. After his apprenticeship, Mr. Ginger joined the Chief Electrical Engineer's Department of the Southern Railway. He subsequently became Assistant for Substations & Cables to the Chief Electrical Engineer of the former London & North Eastern Railway, and afterwards held similar appointments with the Railway Executive and the Eastern and North Eastern Regions of British Railways. In these appointments he was largely responsible for the design and layout of the substations and distribution systems for the Liverpool Street–Shenfield and the Manchester, Sheffield and Wath electrification schemes. In 1950 he joined London Transport as Assistant Electrical Engineer (Outdoor), and four years later he was promoted to be Assistant Chief Electrical Engineer.

Mr. L. A. M. Ginger

British Railways

MR. D. FREW, Chief Accountant, British Railways, Scottish Region, who, as recorded in our August 18 issue, has retired, joined the Glasgow & South Western Railway in 1911 and spent his early service in the Audit Department. In 1923 he was appointed to the Accountant's Office of the London Midland & Scottish Railway in Glasgow. Six years later he went to the Estate Accountant's Office, and in 1931 became Estate Accountant, Scotland, for the L.M.S. In 1940, he was appointed Estate Accountant, L.M.S.R., Euston, and in 1944 he became Assistant (Special Duties) in the Chief Accountant's Department. He was appointed shortly afterwards to the position of Hotels Accountant, L.M.S.R., London, and later seconded to the Hotels Executive of the British Transport Commission until December, 1949, when he was appointed Assistant to the Accountant in the London Midland Region of British Railways. In 1951 he was appointed Assistant Accountant with the Scottish Region of British Railways and four years later was promoted to be Regional Accountant. This position has recently been re-designated Chief Accountant. Mr. Frew is a member of the Association of Certified & Corporate Accountants and also of the Institute of Transport.



Mr. D. Frew

Mr. D. P. Williams

MR. D. P. WILLIAMS, Senior Assistant to the Public Relations Officer, London Transport Executive, who, as recorded in our August 18 issue, has been appointed Assistant Public Relations Officer, British Railways, Eastern Region, was educated at Goudhurst School and joined the London Passenger Transport Board in 1944. After experience in a number of offices, he was selected in 1949 for training as a Junior Executive Assistant. On completion of his training period he was appointed Personal Assistant to MR. A. B. B. VALENTINE, then a Member of the London Transport Executive responsible for operating and commercial matters. In 1955 he returned to the Operating Department of the London

Transport Executive and served as a Divisional Inspector on the Northern Line. The following year he was appointed Personal Assistant to SIR JOHN ELLIOT, then Chairman of the Executive. In 1959 he became Senior Assistant to the Public Relations Officer, the position he has now vacated.

MR. C. M. SYKES, Traffic Costing Officer, Liverpool, British Railways, London Midland Region, who, as recorded in our July 28 issue, has been appointed Principal Assistant to the Line Traffic Manager, Manchester, is a native of Liverpool and was educated at Merchant Taylors School, Crosby. He joined the former London Midland & Scottish Railway in 1934 and, after training as a Traffic Apprentice, held various appointments in the Traffic Department as Stationmaster and Goods Agent. In 1943 he joined the Royal Engineers and served in Italy and Austria. On return from the services, he became Goods Agent at Sowerby Bridge

Mr. C. M. Sykes

and then moved to Whitehaven in December, 1947 as District Traffic Agent. In 1950 he became Goods Agent at Lancaster and in 1951 transferred to the Scottish Region on Traffic Development work at Glasgow. A year later he joined the newly formed Traffic Costing Service in Glasgow and subsequently held positions as Traffic Costing Officer at Euston, Manchester and Liverpool before taking up his new appointment.

MR. S. H. WICKS, Assistant Treasurer, British Railways, Western Region, has retired.

MR. F. NEWLOVE, Stationmaster, Driffield, British Railways, North Eastern Region, has been appointed Stationmaster at Malton.

MR. P. G. PRICE, District Goods Manager, Manchester, British Railways, London Midland Region, who, as recorded in our July 21 issue, has retired, joined the London & North Western Railway in 1918 in London and later was appointed Goods Agent, Dudley. He subsequently became Goods Agent at Burton-upon-Trent, Assistant District Goods & Passenger Manager, Bristol, Assistant District Goods & Passenger Manager, Derby, Assistant District Goods Manager, Leeds, and at the end of 1952, District Goods

Mr. P. G. Price

Manager, Bolton. Mr. Price became District Goods Manager, Manchester, in 1958.

MR. N. J. ALLCORN, Assistant, Chief Civil Engineer's Department, Kings Cross, British Railways, Eastern Region, has been elected an Associate Member of the Institution of Civil Engineers.

Overseas

MR. N. S. TYABJI, who, as recorded in our August 18 issue has been appointed Chief Engineer, Eastern Railway of India, was

Mr. N. S. Tyabji

born in 1912. He studied at St. Xaviers' School and College in Bombay, and took his degree in Civil Engineering from the City & Guilds College of London University in 1936. He joined the former Bengal Nagpur Railway in February, 1937, and was appointed Assistant Engineer on probation in charge of the Nainpur subdivision. He was confirmed as Assistant Engineer in 1943 while serving with the Indian Army in which he attained the rank of Major commanding railway construction units. On his release from the Army in 1947, he was appointed District Engineer, Nainpur. In 1952 Mr. Tyabji was promoted to be Deputy Chief Engineer, Bengal Nagpur Railway, and later became Engineer-in-Chief (construction) on the South Eastern Railway. He also served for short periods on the Central and the Northeast Frontier Railways.

Engineers JUAN ARTURO LEGNAZZI and EOLO BELLISARIO of the Argentine State Railways are at present in France to study the electrification of the French Railways.

We regret to record the death of MR. T. C. COURTNEY, a former Chairman of the Coras Iompair Eireann board to whom editorial reference is made on page 237.

British Transport Commission

MR. A. R. DUNBAR, O.B.E., Manpower Adviser to the British Transport Commission, has been elected President of the Railway Students' Association for 1961-1962.

SIR LEONARD SINCLAIR, a part-time Member of the British Transport Commission, to whom editorial reference is made on page 237, has retired.

The British Transport Commission has announced the constitution of the board of Railway Sites Limited, the company formed to accelerate the development of railway properties. The board will consist of MAJOR-GENERAL G. N. RUSSELL, Chairman; MR. H. U. R. MATTHEWS, Deputy Chairman; SIR REGINALD WILSON, Director; and MR. W. S. BARNES, at present Chief Estate & Rating Surveyor, B.T.C., Managing Director. Editorial reference is made on page 238.

Industrial

MR. A. A. MARIANS, Manager, British Wagon Trade Facilities Limited, has been appointed to the board.

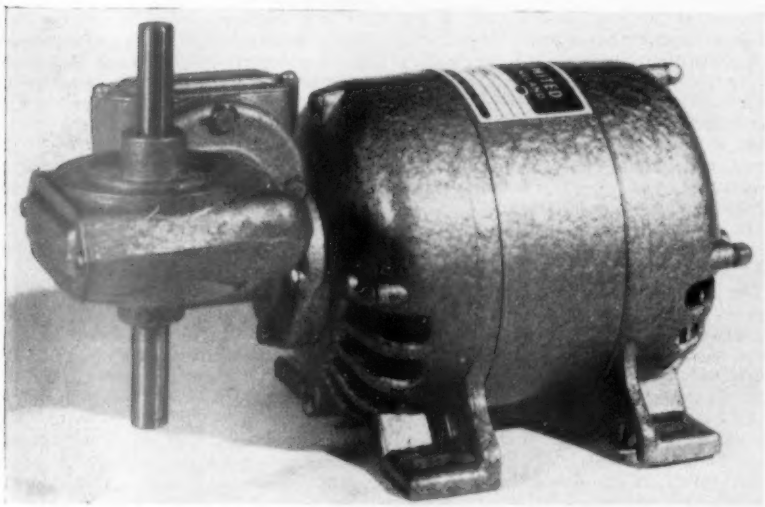
MR. R. HADEKEL has been appointed Chief Engineer, Trico-Folberth Limited.

We regret to record the death of MR. W. A. MACFARLANE, President of the Institute of Fuel and Managing Director of the National Industrial Fuel Efficiency Service.

MR. W. D. C. CORMACK, Publicity Manager of Thos. Cook & Son Limited, has been elected Chairman of the Publicity Committee of the Association of British Travel Agents.

SIR DOUGLAS BRUCE-GARDNER, a director of Guest, Keen & Nettlefolds Limited, and the Guest, Keen & Nettlefolds Steel Company, has been appointed to the board of Guest, Keen & Nettlefolds (South Wales) Limited.

NEW EQUIPMENT *and Processes*



SMALL MOTOR

The first of a series of Comtex fractional horse-power a.c. electric motors is designed to give a wide range of torque and output speeds. Manufactured to class "E" B.S. 2757 specification, which allows a temperature rise of 65 deg. above ambient, the motor is available with direct drive or with flange-mounted single- or double-reduction gearboxes (as illustrated).

All motors, both of the induction and commutator types, are reversible and can be supplied with a capacitor mounted at the free end. Arranged for foot or flange mounting, they will run in any position and the gearbox can be rotated to bring the output shaft to the most suitable drive position.

Self-lubricating bearings are fitted to the direct-drive motor, and a ball-thrust journal bearing on the geared units. Motors required to operate in damp or oily conditions can be provided with "Encapsulated" windings as an alternative to the larger, totally-enclosed motor normally used for these applications.

The first model of this series is rated at $\frac{1}{30}$ h.p. and can be supplied for operation on single or three-phase supply in a range of voltages.

Further details can be obtained from Comtex Limited, 566, Cable Street, London, E.1.

SPREADING BARROWS

A wheelbarrow which efficiently and rapidly spreads material such as salt, sand, gravel and fertilisers and already in use on British Railways, is simply handled by one man. The barrow becomes a spreader by moving a base flap. This allows a controlled flow of material to fall on the revolving spreading disc above the driving wheel. The faster the barrow is wheeled, the faster the disc revolves and the farther the material is ejected.

Further details can be obtained from Machinery (Continental) Limited, 42, Park Street, Mayfair, London, W.1.

AUTOMATIC DOOR OPERATOR

Now available in England is an automatic operator device for use on hinged and sliding doors.

This electro-mechanical device can be actuated from both sides of the door by a number of methods including a photo-electric cell, electric contacting floor mats using a 24-V. current, and pressure mats or similar "pressure profiles" operating membrane contacts sensitive to pressure waves.

A single-phase a.c. power supply is required and the operator unit is effective for doors within a wide range of sizes and weights. In the event of a power failure, it does not interfere with manual operation and the door can be locked in the normal way.

The device can be mounted on almost any existing hinged door. The drive is by a rubber driving wheel which comes in contact with the floor. By fitting the longest possible lever arm, the designers have ensured that a minimum of force is required to move the door and the fact that the driving unit also gives support reduces the wear on hinges.

The speed of opening can be selected with an approximate range of 1·5 to 2 sec., and controls are supplied for the regulation of the angle of the door and the length of time that it is held open.

When the operator is fitted to a sliding door, each leaf is driven electro-mechanically by means of a fixed rubber driving wheel which rotates on a moving rail attached to the top of the leaf. Width of opening can be regulated.

Further details can be obtained from the U.K. selling agent, the Bolton Gate Co. Ltd., Waterloo Street, Bolton, Lancs.

Ministry of Transport Accident Report

Accident at Strande Castle occupation level crossing between Maidenhead and Cookham, British Railways, Western Region, on January 6, 1961

Colonel W. P. Reed, Inspecting Officer of Railways, Ministry of Transport, inquired into the collision between a passenger train and a motor van at Strande Castle occupation level crossing, at about 5.33 p.m., on January 6, 1961. The 5.26 p.m. Down passenger train from Maidenhead to High Wycombe was travelling at about 35 to 40 m.p.h. when it ran into the van, which was carried forward in front of the engine for about 200 yd. until the train stopped. Both occupants of the van died as a result of the collision. The engine of the train suffered minor damage, but there were no injuries to passengers or railway staff. Emergency services were called and arrived within 12 min. of the accident. The evening was fine, though dark, and not windy.

This crossing is on the single-track branch line from Maidenhead to High Wycombe. It is 2¼ miles from Maidenhead, and ½ mile from Cookham, lying between Cookham Down distant and home signals. The line is level on the approach from Maidenhead, curving gently to the right in a shallow cutting about 18 in. deep. The ground falls away just before the crossing, where the railway is on an embankment about 7 ft. high, and 180 yd. beyond the crossing the railway passes by a bridge over the Maidenhead-Cookham main road.

The private road over the crossing leads from the Up side of the line to the main road. It rises at a gradient of about 1-in-11 from both sides to the railway crossing. It was in good condition from the main road to beyond the crossing, and the surface of the crossing itself was in excellent order.

Gates held shut

The gates are 11 ft. wide and swing away from the railway when they are opened. They are hung so as to close across the road by their own weight, and are held in this position by spring catches. There are no arrangements to hold them in the open position.

The usual trespass and penalty notices had been provided, but the penalty notice on the Up side had been displaced and was found in the Up cess. There are additional notices within the gates on both sides of the line to warn road users against stopping their vehicles foul of the track.

The level crossing comes into view from a Down train at ¼-mile distance, and Down trains can be seen from the crossing when they are 320 yd. from it. "Sound whistle" boards are provided on both approaches to the crossing, the one on the Maidenhead side being 312 yd. from it.

This level crossing has not been free of accidents in the past, and is used by the public to an extent which was never intended at an occupation crossing. There is an alternative route to nearby houses and a caravan settlement from the main road after this has passed under the railway. This in Lightlands Lane, a private road, which, if brought into public use, should enable Strande Castle level crossing to be closed, at least to vehicular traffic. Colonel Reed called for evidence as to the history of the crossing, the steps taken by the railway to restrict its use, and the volume of traffic using it.

The Assistant Civil Engineer, Western Region, advised Colonel Reed that the crossing carried an occupation roadway under the terms of the Cookham Inclosure Award of January 15, 1852. In 1938, it was used for access to a camp site, and in 1943 and again in 1952 legal advice was given to the effect that the railway authorities could not take exception to the extended use of the crossing which would follow development of the adjoining property. In 1955, in connection with residential development, Lightlands Lane was widened and made up to a limited standard.

Difficulty at crossing

In March, 1958, by which time the caravan site had come into use and difficulty was being experienced at the crossing, a meeting was held between the land-owners concerned, the Local Authorities and the British Transport Commission to explore the possibility of making up the lane as a public roadway, but this project did not materialise. In February, 1960, the County Council approached the Commission for a contribution, and an offer was made by the Commission. In August, 1960, a joint meeting was held to discuss a planning application for developing a site for 60 caravans to replace the existing site and also the foundry. Colonel Reed was present at that meeting.

The Commission agreed not to object to the issue of planning permission, provided that the foundry was demolished and that caravans would be taken over the crossing only by arrangement with the railway. The Berkshire County Council then made it clear that it could not proceed with the proposed adoption of Lightlands Lane, as the owners did not wish it to be made up and there was no means of compulsorily doing so.

Abandonment of level crossing

In November, 1960, the Commission offered a contribution towards the cost of making up an access to the rear of, and parallel to, Lightlands Lane. Following a meeting on January 10, 1961, the solicitors wrote to the Cookham Rural District Council with a view to the purchase of the land needed for the new access road. Meanwhile, the County Council had granted outline planning consent to the new caravan site subject to conditions required by the Commission. Outline planning permission has also been granted for an increase in the number of caravans on the new site, subject to the opening up of additional access and the abandonment of the level crossing.

The Assistant Civil Engineer also advised on the interpretation of railway obligations in regard to occupation level crossing. The railway had to provide gates which would close of their own accord, these being installed so that they would tend to fall to. The railway had to maintain a reasonable surface; it was not entitled to lock the gates, and it had to see that users of the crossing shut the gates behind them. Whenever it found any wrong user, the railway had to take this up with the person entitled to the occupation right.

Traffic census

A census of traffic taken on January 27 and 28, 1961, showed that between 6 a.m. and midnight 30 passenger trains and nine freight trains or engines passed over the crossing, and also about 90 motor vehicles and 200 pedestrians and cycles. The peak road traffic between 5 p.m. and 6 p.m. was 11 vehicles and 20 pedestrians and cycles.

As regards this particular accident, the evidence was clear. The driver of the train who was on the right-hand side of the engine described how, after giving a short whistle for a little-used level crossing in rear, he gave a long blast at the "sound whistle" board for Strande Castle crossing as he approached it at 35-40 m.p.h. He said that he always did so, because of the amount of road traffic and the frequent occasions on which drivers saw vehicles crossing the line as trains approached.

When passing this board he could see some lights among the trees on the Up side, and as he came to the crossing the head-lamps suddenly appeared through the Up side gate and shone across the track. He then heard a crash. The regulator was already closed, and he applied the brake. The steam heating was shut off before the train came to a halt.

Gates propped open

The fireman at once went to the nearest call-box to telephone for emergency services. Having been on the left side of the engine, he had not seen the car lights but noticed that the gate on his side was open. He emphasised the concern felt by engine-men about this level crossing.

The Cookham stationmaster described the constant difficulties experienced in trying to keep the crossing gates closed. A permanent-way inspector and ganger both said that they had met with obstruction and rudeness when they tried to get the names of persons who propped the gates open and left them in that position.

On occasion lorries were driven through the gates, forcing open the spring catches and frequently damaging them, because drivers were disinclined to get out and open them by hand. Further evidence showed that both the occupants of the van involved in this accident lived locally and used the crossing regularly. On this occasion the gates were propped open and the van travelled on to the crossing without stopping.

Inspecting Officer's conclusions

Colonel Reed found that no blame rested on the railway staff. The driver of the train had been alert, he had sounded his whistle properly, and he had no chance of avoiding the collision. The subsequent action taken by the train crew had been prompt and proper, and the quick response of the emergency services had been most satisfactory.

The accident was the fourth at this crossing within the past eight years, and Colonel Reed said that it would not be the last unless there was some improvement in behaviour or better arrangements were made. It had been difficult for the railway to check the growth of road traffic, although it had been alive to the position and had taken action to limit the use of the crossing by resisting land development which would increase road traffic. Colonel Reed hoped that present negotiations to enable the crossing to be closed would be brought to a successful conclusion. The proposal to construct an alternative road might be better.

Train-warning needed

Colonel Reed thought that a train-warning device automatically operated by approaching trains should be installed. A stop post and catch for each gate should also be provided to hold it open, to obviate the need for a single-handed driver of a motor vehicle to improvise a prop. He saw no reason why the provision of means of keeping the gates open would make road users less inclined to close them than they were at present. Meanwhile, he understood that further efforts were being made in co-operation with the police to obtain some improvement in gate discipline.

Colonel Reed pointed out that there were a great number of occupation crossings where public use had grown over the years without a commensurate improvement in the standard of protection.

The chance of an accident at level crossings of the type at Strande Castle was always present. Moreover, the risk of derailment and serious damage to a train, which might be carrying a great number of passengers, was becoming greater. There was the increase in the number of motor vehicles and tractors using these crossings, and the fact that the lighter construction of the multiple-unit diesel and electric train sets, now coming into general use, made them far more vulnerable than a steam train drawn by a solid engine with an axle-loading nearly three times as great. The standard of protection at occupation crossings where public or semi-public use had developed compared ill with that at many public crossings where road traffic is no greater. Colonel Reed hoped that ways would be found of giving them protection on their merits.

The problem of curbing the increase in the number of such crossings was another matter. Constant vigilance was required of the railways to check the growth of road traffic at such crossings, and the railways were fully aware of this. Colonel Reed called attention to the Town & Country Planning General Development Order, 1950, Section 9. This required a local planning authority to consult with the Minister of Transport before granting permission for development which was likely to increase road traffic over a level crossing. The provisions of this Order would help materially, provided that they were fully appreciated. Colonel Reed said it might be advisable to draw the attention of local authorities to the significance of Section 9 of the Order, to ensure that due consultation took place before permission was granted for any development likely to result in a material increase in the volume of road traffic using a level crossing.

Western Region winter passenger timetable

The even-interval timetable to be introduced by the Western Region of British Railways on September 11 was reviewed in our June 2 issue and the outstanding features of its winter timetable were the subject of an editorial article in last week's issue of this journal.

There are a number of other features which are of interest, among which are trains from London to Birmingham which will leave Paddington at 8.20 a.m., and then every hour from 9.10 a.m. to 8.10 p.m. In the return direction, trains will leave Birmingham (Snow Hill) at 7.30 a.m., 7.35 a.m., every hour from 8.0 a.m. to 6.0 p.m., and at 8.0 p.m. Most of these trains will also run to and from Wolverhampton, Shrewsbury, and the North. A two-hourly service will run between Paddington, Oxford, Worcester and Hereford, leaving Paddington at 9.15 a.m. to 7.15 p.m.

"Mayflower" re-timed

With the withdrawal of the 1.30 p.m. Paddington to Penzance, the *Royal Duchy* will, in future, be the 8.30 a.m. Paddington to Penzance and 11.30 a.m. Penzance to Paddington express. The 4.30 p.m. Paddington to Truro will be named "The Mayflower" in place of the 5.50 p.m. Paddington to Plymouth which also will be withdrawn.

Alterations have been made in the schedules of certain trains on cross-country routes. Among these is the 9.0 a.m. Wolverhampton to Penzance (*The Cornishman*) which has been retimed to depart at 9.55 a.m. The 7.30 a.m. from Penzance to Crewe will start at 7.5 a.m., cease to call at Totnes, and will call additionally at Abergavenny.

A train will leave Cardiff at 9.40 a.m. for Plymouth, replacing the 11.0 a.m. Swansea to Penzance.

The existing daily steamer service from Fishguard to Rosslare Harbour will be maintained until the night of September 23, following when it will be reduced to three sailings weekly on the nights of Monday, Wednesday and Friday.

The new timetable will operate until June 17, 1962.

Western Region mayors entertained at Paddington

Four railway mayors, of whom three are active staff and one retired, were entertained at a luncheon, on August 22, by Mr. J. R. Hammond, General Manager, British Railways, Western Region, accompanied by principal Officers of the Region. In the illustration are, seated from left to right: Alderman N. M. Eschle, Mayor of Slough, an Electrician; Alderman T. G. Gay, Mayor of Swindon, formerly a Clerk in the Chief Accountant's Department; Mr. J. R. Hammond; Councillor R. J. Pengelly, Mayor of Fowey, an Inspector; Alderman R. E. H. Moulder, Mayor of Gloucester, a Passenger Guard; standing, Mr. L. W. Ibbotson, Assistant General Manager (Traffic); Mr. R. A. Smeddle, Chief Mechanical & Electrical Engineer; Mr. S. G. Ward, Chief Establishment & Staff Officer; Mr. D. S. Hart, Divisional Traffic Manager, Western Division; Mr. R. C. Hilton, Divisional Traffic Manager, Midlands Division; and Mr. C. J. Rider, Public Relations & Publicity Officer.

Railway mayors of the Western Region of British Railways with (seated centre) Mr. J. R. Hammond, General Manager

E.A.R. & H. revenue and tonnages, July, 1961

Total earnings on East African Railways & Harbours in July, 1961, were approximately £2,043,000 compared with £2,070,000 in the same month last year. Railway earnings were £13,000 below and harbour earnings were £35,000 below the level estimated for the month under review.

The approximate railway revenue for July amounted to £1,652,000 (£1,617,000 in July, 1960), an increase of £35,000. Receipts from goods traffic increased by £54,000 and livestock receipts by £3,000. Passenger traffic receipts fell by £11,000, inland water transport receipts by £8,000, and hotels and catering by £4,000.

Public goods traffic railed up-country from Mombasa Island during July amounted to 89,000 tons, a decrease of 8,000 tons compared with the same month of last year. Railings to the coast at 65,000 tons were 2,000 tons more than in July, 1960. Coffee increased by 3,000 tons, and sisal and tea each increased by 1,000 tons. There were decreases of 1,000 tons each in railings of cattle cake, cotton, and grains.

Public goods traffic railed up-country from Dar-es-Salaam totalled 22,000 tons (19,000 tons). Railings on the Tanganyika Central Line to Dar-es-Salaam fell from 29,000 tons to 26,000 tons. Oilseeds decreased by 2,000 tons and cotton, grains, lead, and sisal each decreased by 1,000 tons. There was an increase of 3,000 tons in railings of coffee.

Public goods traffic railed up-country from Tanga amounted to 2,700 tons compared with 1,000 tons in July of last year. Railings to Tanga from up-country fell from 6,200 tons to 5,100 tons. The main decrease was in sisal railings, which fell by 800 tons.

Public goods traffic railed up-country from Mtwara totalled 50 tons compared with 150 tons last year. Railings to the coast in July also decreased from 1,600 tons in 1960 to 170 tons. Grains fell by 300 tons, oilseeds by 600 tons and timber by 500 tons.

Earnings at the ports of East Africa during July, 1961, were £391,000 (£453,000).

Train service alterations in Tyneside area

The timetable covering the winter train service in the Tyneside area of British Railways, North Eastern Region, shows a number of changes, operating from September 11, most of which affect Sunday services. As from Sunday, September 17, trains will not call at Beal, Felling and High Shields Stations. At Gateshead certain early morning and late night trains will not stop, and there will be no Sunday trains before 7 a.m. or after 10.20 p.m. On Sundays the 7.35 a.m. train from Newcastle to Middlesbrough will no longer call at Easington, though the station will be served by the 7.08 a.m. from West Hartlepool to Sunderland. On the Newcastle–Carlisle line three Sunday morning trains in each direction will no longer call at Blaydon. Sunday services at this station will begin with the 1.38 p.m. train to Hexham and the 1.54 p.m. to Newcastle. The 11 a.m. and 8.15 p.m. Sunday trains from Carlisle, and the 6.20 p.m. and 8.40 p.m. Sunday trains from Newcastle will no longer call at Gilsland. The principal alterations to weekday trains affect Felling Station, where there will be no service before 5.30 a.m. (Mondays to Saturdays) or after 10.30 p.m. (Mondays to Fridays). The 4.53 a.m. from Newcastle will not stop at Felling, and the 10.40 p.m. and 12 midnight from Newcastle, the 9.46 p.m. from Middlesbrough and the 10.40 p.m. and 11.28 p.m. from South Shields will call at Felling only on Saturdays.

British Transport Commission Police sports

This year the Northern Area of the British Transport Commission Police Force sponsored the Eighth Annual Sports Meeting which was held on the sports field of the Railway Athletic Club, Brinkburn Road, Darlington, on August 30, 1961, beginning at 1 p.m. Among those who were present were the Chief Constable of the British Transport Commission Police Force, Mr. A. C. West, O.B.E., Members of the British Transport Commission Police Committee, representatives of the British Transport Commission and Chief Constables from Civil Police Forces within the North Eastern Police Area.

British Transport Commission Police Officers from all parts of the country competed in the 110, 220, 440, 880-yd. one-mile flat races, and a one-mile walk. Less strenuous events were provided for older men. Policewomen also competed and several competitions were arranged for wives and children. The final of the W. W. Wood Bowls Shield was played during the meeting. Trophies were presented at 5.45 p.m. by Mr. J. Howard, a member of the British Transport Commission Police Committee, and the wives of Area Chiefs of Police awarded individual prizes after each event.

Swiss winter train service

Certain improvements are to be made in the Swiss train services with the introduction of the winter timetable on October 1. In addition to the through sleeping-car and couchette coach which leave Amsterdam for Chur at 8.7 p.m., the Hook of Holland-Basle sleeping-car (in connection with the day Harwich-Hook steamer), leaving the Hook at 7.20 p.m. and running south in the same train from Cologne, is to be extended to Chur, arriving at 10.20 a.m. St. Moritz will be reached by Rhaetian Railway connection at 12.58 p.m. This connection will run during the winter sport season only, from December 16 to March 26. During the same period, an additional train will be run from Chur at 10.4 a.m. to St. Moritz, connecting with the Paris-Chur section of the "Arlberg-Orient Express," and giving a St. Moritz arrival at 12.18 p.m., 40 min. earlier than last winter. Also during the winter sport season, the Chur portion of the "Alpenrose" express will run from Sargans to Basle in advance of the portion from Schwarzach St. Veit (Austria), reaching Basle at 1.5 a.m., but there will be no alteration in the times beyond Basle.

Among the minor railways, the Furka-Oberalp, which a short time ago became independent of the Visp-Zermatt group, is to expand and accelerate its train service considerably. As compared with last winter, there will be six instead of five daily trains between Brigue and Oberwald, with journey times cut by an average of 20 min. Through the populous part of the Rhône Valley immediately east of Brigue, also, there will be additional local trains between Brigue, Betten and Fiesch. Between Oberwald and Realp, this line is closed during the winter because of avalanche risks, but between Andermatt and Disentis, over the Oberalp Pass, the number of winter trains will be increased from four to five, with some slight acceleration, and the usual winter sport service will be operated between Andermatt and Nätschen, and Andermatt, Hospenthal and (once daily) Realp. One or two additional trains are to run also between Andermatt and Göschenen, on the Gotthard main line. It is planned to accelerate considerably next summer the "Glacier Express," the well-known metre-gauge train running through between St. Moritz, Andermatt, Brigue and Zermatt.

Model locomotives at New Zealand trade fair

Eight beautifully detailed models of British-built locomotives, loaned by the manufacturers, are on view now at the New Zealand International Trade Fair in Wellington.

Together with an impressive photographic display, they are exhibited on the 20-ft. long stand of the Locomotive & Allied Manufacturers' Association of Great Britain. Illustrated by photos or by models are examples of up-to-date locomotives by most major British manufacturers—in service both with British Railways and a great many other railways throughout the world.

The whole of the back-wall of the exhibit illustrates the great part played by British manufacturers of diesel and electric locomotives and traction equipment, in the modernisation and re-equipment of British Railways. The side panels show some of the many contributions by the British locomotive industry to railways in New Zealand and other parts of the world.

The exhibition opened on August 22 and will close on September 9.

London Transport tube car for Science Museum

A 32-year-old London Transport Tube car, which has run nearly 1,500,000 miles in the service of Londoners, is to go into honourable retirement this week-end in the Transport section of the Science Museum at South Kensington. It will be displayed on a short length of track alongside a section of platform to resemble part of a London Underground station.

The car concerned, which has been repainted and brought to "fresh-from-shops" condition at London Transport's Acton Works, is No. 3327. It has been modified slightly so that visitors to the Museum will be able to see some of the mechanism.

The car will not be on general show to the public for about two years, as the new gallery in which it is to be displayed is not expected to be ready until the autumn fo 1963.

CONTRACTS AND TENDERS

Modernisation scheme for Crewe Locomotive Works

As part of a general modernisation scheme for the Crewe Locomotive Works of the London Midland Region of British Railways, Copperad Limited, manufacturer of heating and ventilating equipment, has been awarded a contract for the manufacture and provision of 3,760 ft. of Raystrip and 64 radiant heating panels, to be installed in the steel foundry.

The administrative council of the Swiss Federal Railways has approved credits for the purchase of: 36 electric motor-coaches of class RBe 4/4; 10 diesel-electric 1,200 b.h.p. locomotives of class Bm 4/4; 300 two-axle flat wagons of type M5; 100 four-axle flat wagons of type M9; and 100 silo wagons for grain traffic. The order for the 10 diesel locomotives has already been signed with S.L.M. (engine and mechanical portions) and Sécheron (electrical equipment).

Simmering-Graz-Pauker A.G. has received an order for 12 diesel-hydraulic 2,200 b.h.p. B-B type 80-*tonne* locomotives for the Bulgarian State Railways, and a contract to increase this number is under negotiation.

Scandia A/S has received from the Danish State Railways an order for 100 fixed-roof sliding-side wagons of Seag type, to be built under licence, and for delivery to begin before the end of 1962.

The Westwaggon Works of Klöckner-Humboldt-Deutz has received an order for 160 bogie-mineral wagons for the New Liberian Mining Company. Capacity is to be 120 tons and Knorr KE air brakes are to be fitted.

British Railways, North Eastern Region, has placed the following contracts:—

L. C. Abdale (Building Contractors) Limited: erection of an extension to the messroom and staff accommodation and a medium voltage switch room extension to the sub station and compressor house at Dinsdale Rail Welding Depot, near Darlington

James Hadfield & Son Ltd.: waterproofing and drainage to the deck of bridge No. 24A on the Wrenthorpe to Adwalton Junction line near Dewsbury Central Station.

Advance information. The State Railways of Thailand is planning a six-year modernisation programme, financed in part by a loan from the World Bank, to increase the capacity of the railways, improve efficiency and reduce operating costs. The tentative list of requirements for the third railway project includes:—

60 1,000-h.p. diesel locomotives
5 shunting diesel locomotives
1,654 freight cars

The Export Services Branch, Board of Trade, has received calls for tenders as follow:—

From Australia:

28 items of electric lamps for outdoor and indoor lighting.

The issuing authority is the Secretary, Victorian Railways, Melbourne, C.1, to whom bids should be sent. The tender No. is 62,044. The closing date is September 20, 1961. The Board of Trade reference is E.S.B./26745/61.

From Egypt :

Supply of iron locks for carriages.

The tender No. is E.R. 304.G.3/57. The closing date is September 12, 1961. The Board of Trade reference is E.S.B./26741/61.

Supply of tyres for passenger bogie carriages.

The tender No. is E.R. 321.G.8/2/1448. The closing date is September 16, 1961. The Board of Trade reference is E.S.B./26740/61. The issuing authority for the above tenders is the Purchases & Stores Department, Railway Building, Shoubra Subway, Cairo, to which bids should be sent.

From the Federation of Rhodesia and Nyasaland:—

1 milling machine for spring-saddle seats, greaseways and oilways of locomotive axleboxes, complete with electrical equipment for a 550V. 3-phase, 50-cycle, 3-wire supply.

The issuing authority is Rhodesia Railways. Bids should be sent to the Secretary, Tender Board, P.O. Box 1999, Bulawayo, Southern Rhodesia. The tender No. is T.B. 545. The closing date is October 11, 1961. The Board of Trade reference is E.S.B./27354/61.

From Greece :

11,700 kg. (85 pieces) chequered plate 850 x 5 mm. cross section and 3.5 mm. length.

The issuing authority is the Hellenic State Railways (SEK), Purchasing & Stores Department, 34, Themistocleous Street, Athens, to which bids should be sent. The tender No. is 5165. The closing date is September 5, 1961. The Board of Trade reference is E.S.B./26788/61.

From Portuguese East Africa:—

Construction of the main station of Beira Railways.

The issuing authority is the Ports, Railways & Transport Department, Lourenco Marques, to which bids should be sent. The tender No. is 10/VO/CFB/61. The closing date is October 3, 1961. The Board of Trade reference is E.S.B./27360/61.

Permanent way material.

The issuing authority is the Ports, Railways & Transport Department, Lourenco Marques, to which bids should be sent. The tender No. is 220/61. The closing date is November 13, 1961. The Board of Trade reference is E.S.B./18047/61.

From South Africa :

10 mechanical horses, fifth wheels and heavy haulers.

The issuing authority is the Stores Department, South African Railways. Bids should be sent to the Chairman of the Tender Board, S.A.R., P.O. Box 7784, Johannesburg. The tender No. is F8780. The closing date is September 22, 1961. The Board of Trade reference is E.S.B./27048/61.

From Sudan :

50 metric tons diesel-crankcase lubricating oil S.A.E.30.

The issuing authority is the Office of the Controller of Stores, Sudan Railways, Atbara, to which bids should be sent. The tender No. is 2427. The closing date is September 18, 1961. The Board of Trade reference is E.S.B./26768/61.

From Thailand :

60 lead acid " Iron Clad " type batteries for train lighting.

The tender No. is 04156. The closing date is September 12, 1961. The Board of Trade reference is E.S.B./27057/61.

529,700 rail anchors.

The tender No. is 04263. The closing date is October 13, 1961. The Board of Trade reference is E.S.B. 27058/61. The issuing authority is the State Railways of Thailand, Yod-Se, to which bids should be sent.

Further details relating to the above tenders together with photo-copies of tender documents, unless otherwise stated, can be obtained from the Branch (Lacon House, Theobald's Road, W.C.1).

NOTES AND NEWS

Proposal to re-open line. The Midland & Great Northern Railway Preservation Society has a scheme to re-open the disused railway line Themelthorpe and Melton Constable in Norfolk.

Collision in Yugoslavia. A goods train ran into a stationary passenger train near Novi Sad, 46 miles north west of Belgrade, on August 23. Eleven people were killed and 50 injured, 17 seriously.

Protest against proposed service withdrawal. Protests have been made in Monmouthshire against the proposal by the British Transport Commission to withdraw all passenger train services in the eastern and western valleys of the county. Objections on behalf of 13 local authorities will be heard by the Transport Users' Consultative Committee for Wales & Monmouthshire on October 24.

Annual dinner. The annual dinner of the East Indian Railway Officers will take place at the Connaught Rooms on Wednesday, September 27.

Escrick freight depot to close. The North Eastern Region of British Railways is to close Escrick freight depot, between York and Selby, on September 11.

Station to close. British Railways, North Eastern Region, is to close West Stanley Station and Shields Row public delivery siding. This decision, which was taken with the approval of the Transport Users' Consultative Committee will take effect from September 11.

Manchester-Boulogne car ferry. The car ferry from Manchester to Boulogne which has proved to be very popular will be continued next year. During the past five years, this service has transported 7,000 cars and 20,000 passengers to the Continent.

Accident at Little Salkeld. The Leeds to Carlisle line of the London Midland Region of British Railways was blocked on August 22 when two goods trains were in collision near Little Salkeld, about five miles from Penrith. No one was hurt.

Warning schoolchildren. Children playing on the track in the Nottingham area have become so prevalent that the London Midland Region of British Railways has asked headmasters to issue warning pamphlets to schoolchildren emphasising that express trains in the area frequently travel at 90 m.p.h.

B.I.M. 16th National Conference. The 16th National Conference of the British Institute of Management will be held in Torquay from October 24–26. It will be opened by Mr. S. P. Chambers, Chairman, Imperial Chemical Industries Limited and closed by Mr. Dennis Vosper, Secretary for Technical Co-operation.

Additional service. British Railways, North Eastern Region, is to provide a convenient connecting rail service to London and the Eastern counties by running an additional train from Batley, Dewsbury (Central) and Ossett, commencing on September 11.

Ramblers' excursion. British Railways, North Eastern Region, is to run a ramblers' excursion train from the West Riding to the Yorkshire Dales National Park and Westmorland on Sunday September 17.

Rotterdam steam tramway special. The Railway Enthusiasts' Club has arranged a steam-hauled special train to tour the whole of the remaining system of the Rotterdam Tramway Company on the afternoon of Saturday, October 7. Other visits of tramway interest will also be made, including trips over two lines closing at the end of October.

U.K.R.A.S. entertains Director-General of Iraqi Railways. The United Kingdom Railway Advisory Service held an informal dinner at Charing Cross Hotel on August 30 for General S. Z. Tawfiq, Director-General of Iraqi Republican Railways. General Tawfiq came to the United Kingdom to open the new London offices of Iraqi Airways. He will be staying for the forthcoming air show at Farnborough.

Car Ferry for Southern Region. A "Brighton Line" service began on August 29 on British Railways car ships between Portsmouth and the Isle of Wight. The service provides a ship leaving Portsmouth every hour, on the hour. Crossing time has been cut from an hour to 35 min. The ship illustrated on this page is the *Camber Queen*, a new car ferry introduced especially for the new service.

Colchester-Chelmsford electrification delayed. British Railways announced recently that the introduction of an electric train service between Colchester and Chelmsford, scheduled for next summer, may not be inaugurated until the summer of 1963. Difficulty has arisen because of the differing voltages along the line.

New range of electric motors. Lancashire Dynamo & Crypto Limited, has produced a new range of motors with outputs and dimensions to the German standard DIN42673 which still comply in all respects to BS2613.

Railway Students' Association tour. The annual social coach tour of the Railway Students' Association will be held on September 16 and will consist of a tour of the Berkshire and Wiltshire downs starting from Reading South Station.

Export sales increased. Speaking at a symposium on "Hydraulic Power and its Application," Mr. Tangye, Managing Director of Tangyes Limited, said that his company had increased its home and export sales by over 50 per cent, as for the same period last year.

Railway Correspondence & Travel Society special train. The Railway Correspondence & Travel Society is to run a special train over the former Midland & South Western Junction Railway on September 10, when the passenger train service is to be withdrawn and several sections closed to all traffic. Details may be obtained from Mr. J. Miller, 65, Hollington Crescent, New Malden, Surrey.

Third International Trade Fair, Brno. The Third International Trade Fair in Brno will take place from September 10 to 24, 1961. The Press-Centre for foreign journalists is situated at Hlinky 104. The telephone number of the Fair Management is Brno 74031-9. Telegraph is Fairbrno Brno.

Increase in rail fares. Ordinary rail and season ticket fares on British Railways are to be increased on September 1. Period mid-week tickets, holiday runabout tickets, day-time rail rover tickets, and "all-in" holiday tours to Scotland, the Isle of Man, and Ireland, are not affected this year. Cheap day tickets are not directly affected but the periodical review and adjustment to these fares will continue.

Exhibition of portable lamps. The exhibition of NIFE, portable lamps which was to be held at the Park Hotel, Cardiff on October 23-27 will now take place from November 20 to 23.

Coronation of Railway Queen. Miss Susan Garside, who, as recorded in our August 18 issue, has been chosen as Railway Queen for 1961-62, will be crowned at Belle Vue Gardens, Manchester, on September 9, under the joint presidency of Mr. D. McKenna, Assistant General Manager, British Railways, Southern Region, and Mr. G. Brassington, Assistant General Secretary, National Union of Railwaymen,

London-Nottingham Midland Pullman. The London Midland Region of British Railways is to introduce a Midland Pullman service between London and Nottingham on October 2. The train will depart from London, St. Pancras at 11.20 a.m. each day except Saturday and call at Leicester and Loughborough, arriving at Nottingham at 1.20 p.m.

Car deck of the Isle of Wight car ferry mv. "Camber Queen"

In the Up direction the journey from Nottingham will start at 3.45 p.m. and arrive in London at 5.45 p.m. after the same intermediate stops. The appropriate Pullman supplements will be charged and all seats reserved.

Criticism of rail services. The Industrial Association of Wales has forwarded to British Railways objections to proposals for re-timing express passenger services between West Wales and London. They feel that an improved service from Cardiff and Newport is negatived by slower timing in the Swansea and West Wales section.

York-Harrogate train retimed. In response to many requests from regular passengers, British Railways, North Eastern Region, is to retime the 8.24 a.m., York-Harrogate train, from Monday, September 11 to leave York at 8.19 a.m. and run 5 min. earlier.

South Wales Pullman demonstration. The Western Region of British Railways is to run a demonstration trip of the new stock for the *South Wales Pullman* diesel train on September 6. The stock will be put into service on September 11, when the existing *South Wales Pullman* will be withdrawn.

Goods train divided. Both tracks on the Liverpool Street to Cambridge main line were blocked when a goods train broke in half near Sawbridgeworth, Hertfordshire, on August 22. The loose wagons tore down overhead electrical equipment as they became derailed, the front half of the train pulled up safely some distance from the wreckage. The train crew was uninjured.

Increase in day-return fares. Most day-return fares in the East Lancashire Division of the London Midland Region of British Railways, will be increased on September 1.

Institution of Locomotive Engineers. Following the change of address of the Institution of Locomotive Engineers, recorded in our news pages last week, there has been a change of telephone number. This is now Victoria 7838.

Spanish rail collision. Two passenger trains collided in La Palma del Condado Station on the Seville–Huelva line on August 21. Thirty-nine people were injured of whom five are in a grave condition.

Train accident in Moravia. Eighteen people were killed and ten injured when a passenger train collided with freight trucks on a railway line in north-west Moravia on August 28.

Bonus scheme at Snow Hill Station. A bonus scheme for porters to get trains away on time has been introduced at Snow Hill Station, Birmingham, by the Western Region of British Railways. On a recent Saturday the scheme is estimated to have saved 3 hr. 20 min. of waiting time. It is estimated that 30 men will be saved at Snow Hill Station eventually as a result of time-study methods.

Wickman Limited results. A statement by the Chairman of Wickman Limited, Lord Aberconway, in the company's report and statement of accounts for 1961, shows that for the year ended March 31, there was a general improvement in orders for the re-equipment of the engineering industry. As a result the company entered the current year with an order book greater than ever before. 60 per cent of orders received for multi-spindle automatic lathes were from the home markets and orders for the export market were satisfactory.

Decline in C.P.R. earnings. Canadian Pacific Railway results for the half-year ended June 30 show a decline in railway revenue of $10·3 million, and in railway net earnings of $2·9 million. Dividend for 1960 was $1·50 a share from earnings of $1·81 a share. The revenue does not reflect payments to be received as a result of the recommendations of the McPherson Royal Commission.

Delay to Chelmsford-Colchester electrification. The Eastern Region of British Railways has announced that the full through electric train service between Liverpool Street and Clacton and Walton will not be introduced in the summer of next year, as had been hoped. Difficulty has been experienced with the electrical equipment for the rolling stock and, until these have been overcome, it has been felt prudent to hold up manufacture. There will, therefore, be some delay in delivery. The erection of the overhead electrical equipment and the re-signalling on the line between Chelmsford and Colchester are in hand and it is hoped that by the middle of next year a limited number of electric trains will be in service over this section.

Spanish rail accident. The third serious accident in a week occurred on August 26 at Moncada, a suburb of Barcelona, when an incoming train from Lérida left the rails on a curve. Although the train was travelling slowly, the first four wooden carriages telescoped and were reduced to matchwood, one of them falling 25 ft. into a street after mounting the preceding carriage. Four persons were killed and 50 injured, 16 seriously. Confusion was heightened by a complete breakdown caused when the falling train overturned a street lamp and short-circuited the power system.

D.S.I.R. change of address. The Headquarters of the Department of Scientific & Industrial Research is moving to State House, High Holborn, London, W.C.1, telephone Chancery 1262. Correspondence should be addressed there from August 30, and telephone inquiries to the press office should be made on the new number from September 4.

Carriage washing plant at Hull. The North Eastern Region of British Railways will shortly bring into operation an up-to-date automatic carriage washing plant at Botanic Gardens, Hull. The plant, now nearing completion, will be the third of its type in the Region—those at Heaton and South Gosforth which were completed last year were described in our December 9, 1960, issue.

Formation of French company. Etablissements Kuhlmann of Paris and E. I. du Pont de Nemours & Co. Inc., of Wilmington, Delaware, U.S.A., will form a new French company to manufacture and sell isocyanates, a basic raw material used in the production of urethane foams. Etablissements Kuhlmann and Du Pont will each own 50 per cent of the stock of the new company, to be called Dekachimie, and capitalisation will amount to 30 million new French francs. The new company is designed to serve markets in France and other Common Market countries. Dekachimie will build a plant near Lille at Etablissements Kuhlmann's existing La Madeleine facility. Construction will get under way early next year and the plant will be completed in 1963. Meanwhile, isocyanates from the United States will continue being sold in the European market by the new company.

RUSSIAN GAS-TURBO LOCOMOTIVE

The first Soviet gas-turbine locomotive

Passing out parade at Tadworth

City of London College courses. The City of London College will run Institute of Transport courses in sea, rail, and air transport in its 1961-62 session.

Passing out parade. On August 21, a passing out parade was held at the British Transport Commission Police Training School, Tadworth, Surrey. The cadets were inspected by Mr. K. W. C. Grand, Member of the B.T.C. and Chairman of the Commission's Police Committee. He is shown in the illustration above accompanied by Superintendent G. East, Commandant of the School; Mr. A. C. West, Chief Constable, B.T.C. Police; and Chief Inspector T. Lucas, Deputy Commandant of the School.

Railway Stock Market

With uncertainties about the Berlin situation making for increased caution in stock markets, business in nearly all sections has fallen away and lower prices have ruled. There was no heavy selling, and investors are taking matters calmly. In the foreign railway section, quotations have held up quite well, but they were tested by very few dealings. Antofagasta ordinary stock has strengthened on balance from 20¾ to 21½, and the preference stock at 35½ was maintained as compared with a week ago.

Costa Rica ordinary stock was steady at 38¼ with Chilean Northern debentures 48½, Guayaquil & Quito assented stock 58½, and Paraguay Central prior debentures 18. Mexican Central "A" bearer debentures were 5⅜, while United of Havana second income stock remained at 7½ with the consolidated stock 1½.

Brazil Railway bonds were 4¼ and San Paulo Railway 3s. units 2s. 3d.

International of Central America shares were $14½ with the preferred stock $93.

Canadian Pacifics have been well maintained at $43¾; the preference stock was 55½, but the 4 per cent debentures eased to 52⅞ at which there is a generous yield of 7½ per cent. White Pass shares were $11⅛. Nyasaland Railways shares kept at 10s. 6d. and West of India Portuguese capital stock was quoted at 118½.

Shares of locomotive, engineering and kindred companies have moved back with the general trend in stock markets, though Beyer Peacock 5s. shares firmed up to 7s. and Charles Roberts were better on balance at 6s. North British Locomotive were 5s. 3d. and Birmingham Wagon 20s. 4½d. G. D. Peters kept at 18s. 9d. while elsewhere, Gloucester Wagon 10s. shares were 9s. but Wagon Repairs held steady at 22s. Westinghouse Brake were 33s. 3d.

Pressed Steel 5s. shares eased from 20s. to 19s. 9d. and now yield nearly 7½ per cent. Dowty 10s. shares came back from 33s. 6d. to 32s. 4½d., while British Oxygen 5s. shares at 18s. 1½d. compared with 18s. 4½d. a week ago. Ruston & Hornsby, however, were better on balance at 23s. 7½d. and Vickers showed a small gain at 33s. 3d., but T. W. Ward eased to 72s. 9d. and Stone-Platt were 53s. 6d.

In electricals, A.E.I. receded further from 35s. 9d. to 35s. 3d. their lowest of the year, while G.E.C. were 29s. compared with 29s. 3d. and English Electric have been maintained at 30s. 3d. Among machine tools, Alfred Herbert were 67s., Craven Bros. 5s. shares 8s. 3d. and Asquith 5s. shares 9s. 3d. Ransome & Marles 5s. shares were 15s. 6d. and Pollard Bearing 4s. shares 35s. 3d. Babcock & Wilcox rallied on balance from 25s. 7½d. to 26s. 10½d., Clarke Chapman kept at 38s., while Renold Chain were 44s. 10½d., Guest Keen 89s. 6d. and G. & J. Weir 5s. shares 12s. 10½d. Leyland Motors at 97s. 10½d. have been well maintained on balance, the assumption being that there are good prospects of the dividend continuing at 20 per cent, even if, as is being assumed, Standard Motors may show a bigger loss for the year than was anticipated when Leylands took over the company.

Broom & Wade 5s. shares were 25s. 3d. Davy-Ashmore came back to 140s., Mather & Platt were 37s. 6d., Edwards Vacuum 4s. shares 30s. 3d. and Tube Investments reacted to 63s. 3d. Steel shares, after receding further, attracted buyers and rallied on wider recognition of their above-the-average yields. The general assumption is that although profits of the leading steel companies are expected to show a reduction dividends are likely to be maintained.

Forthcoming Meetings

Sept. 2 (*Sat.*). Permanent Way Institution, London Section. Visit to Southampton Docks.

Sept. 8 (*Fri.*). The Railway Club. Talk, The Skye Line, by H. A. Vallance, 320, High Holborn, London, W.C.1.

Sept. 9 (*Sat.*). The Railway Correspondence and Travel Society. Denton-Harlaxton rail tour.

Sept. 10 (*Sun.*). The Railway Correspondence and Travel Society. Midland & South Western Junction Railway tour.

Sept. 16 (*Sat.*). The Permanent Way Institution, East Anglia Section, visit to Permali Limited, Gloucester.

Sept. 16 (*Sat.*). The South Bedfordshire Locomotive Club, special train over the freight-only, Welwyn Garden City to Hertford branch.

Sept. 16 (*Sat*). Railway Students Association, annual outing from Reading South Station.

Sept. 18 (*Mon.*). The Historical Model Railway Society. Talk, The Construction of Freight Rolling Stock, at Keen House, Calshot Street, N.1.

Sept. 23 (*Sat.*). The Railway Correspondence and Travel Society. The four-counties rail tour.

Sept. 25 (*Mon.*). Institution of Railway Signal Engineers, Bristol. Signalling developments on the Railways of Southern Africa.

Sept. 26 (*Tue.*). The Institution of Locomotive Engineers. Ordinary general meeting and Presidential address. 5.30 p.m. 1, Birdcage Walk, S.W.1.

Sept. 27 (*Wed.*). Annual dinner of the East Indian Railway Officers. Connaught Rooms.

Sept. 28 (*Thu.*). Permanent Way Institution, Nottingham & Derby section. Demonstration of track tools and equipment. Derby.

Sept. 30 (*Sat.*) Talyllyn Railway Preservation Society. Talyllyn Special, 1961. Paddington, 8 a.m.

Oct. 4 (*Wed.*). The Institution of Mechanical Engineers. Railway Engineering Group, Inaugural paper, Some Speculations on the future of Railway mechanical engineering, 1, Birdcage Walk, S.W.1.

OFFICIAL NOTICES

REPRESENTATIVE required by London firm representing provincial manufacturers of railway products. Apply Box 206, *The Railway Gazette*, 33 Tothill Street, London, S.W.1.

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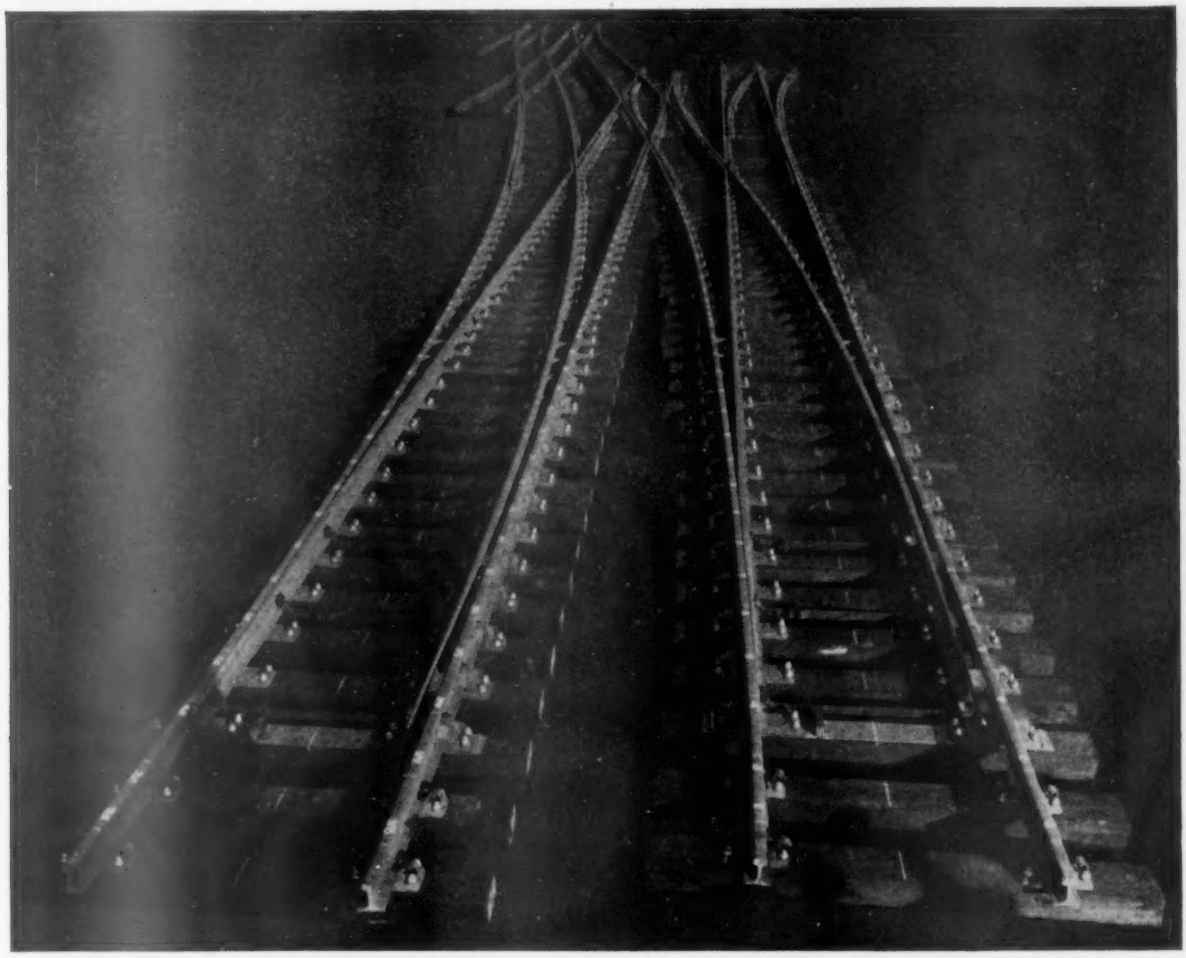
SWITCHES and CROSSINGS



Photograph by courtesy of the Chief Civil Engineer, Eastern Region.

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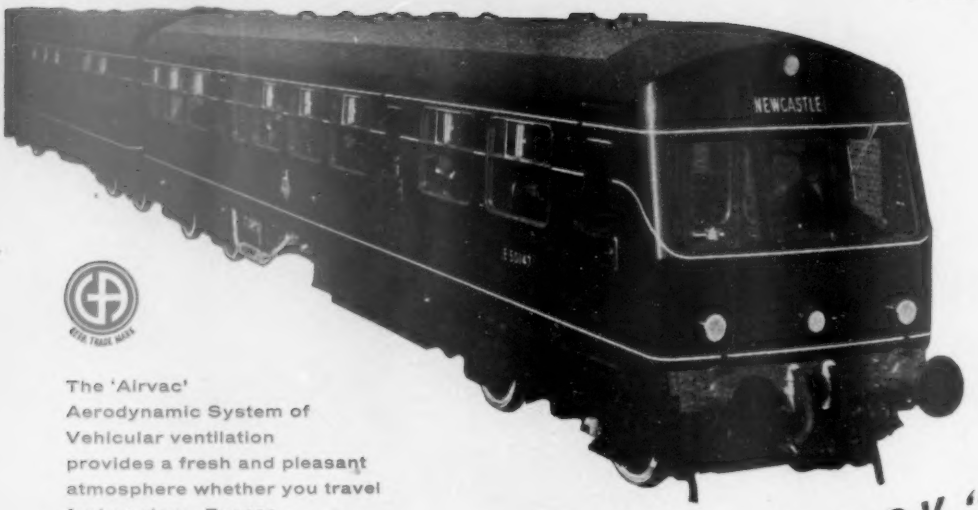

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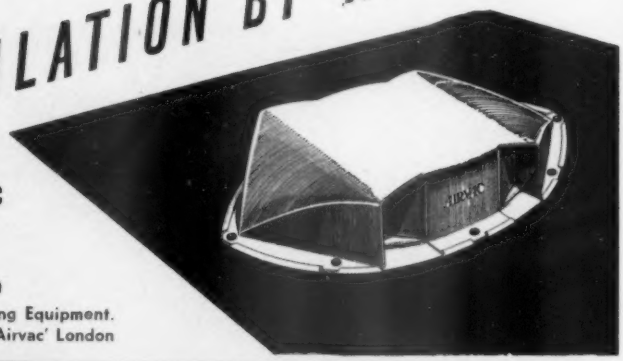

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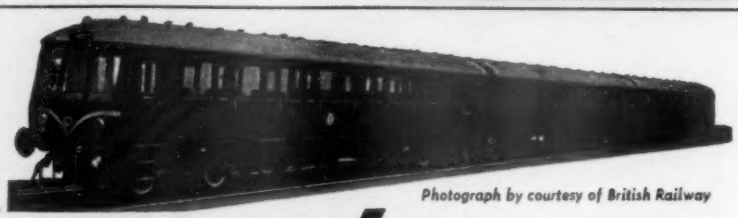

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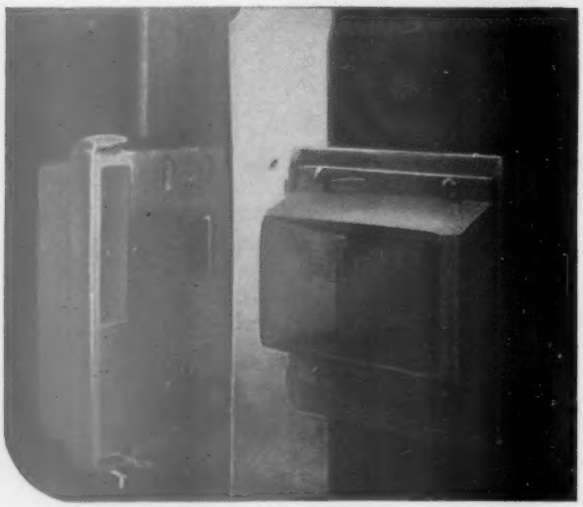

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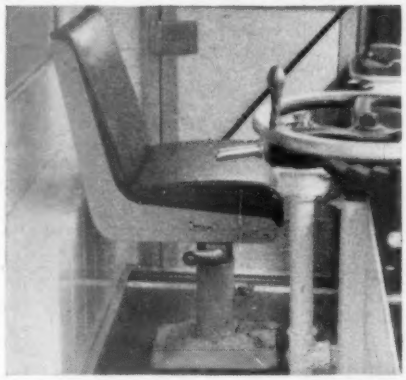

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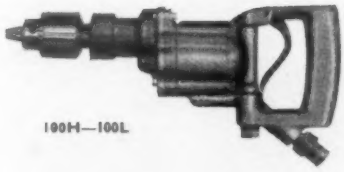
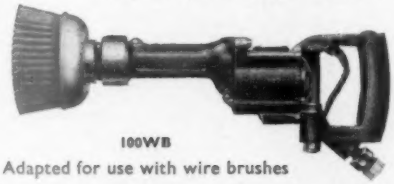


100H—100L

Automatic lubrication from an oil reservoir in the body of the tool.



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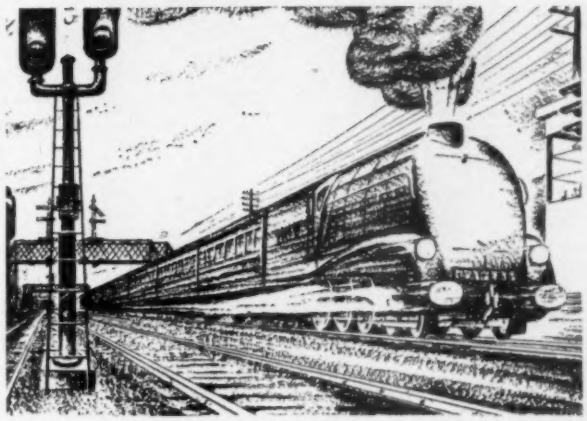

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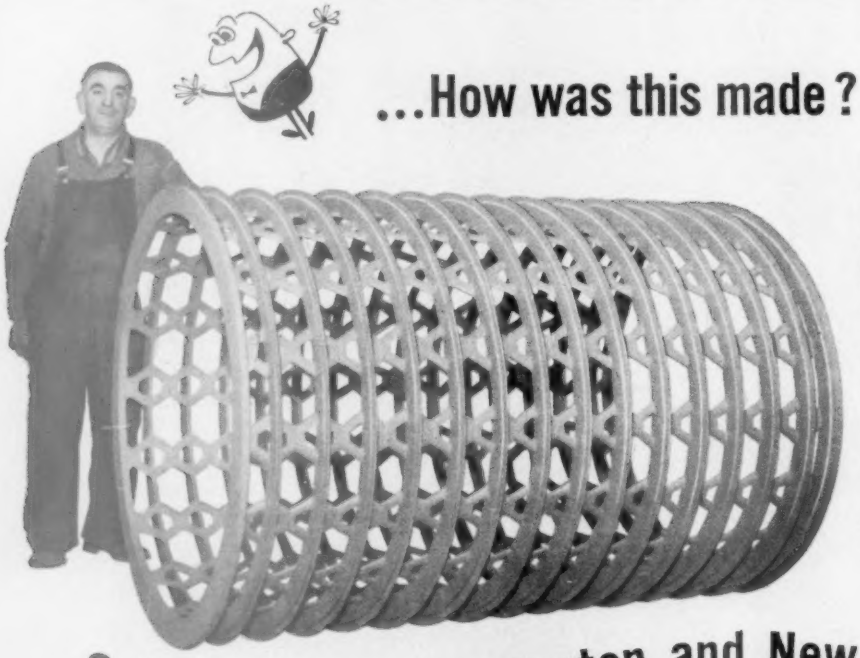

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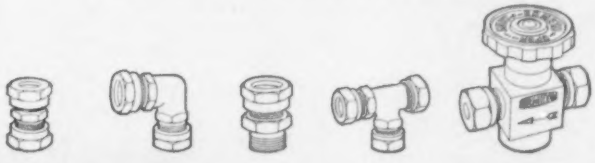

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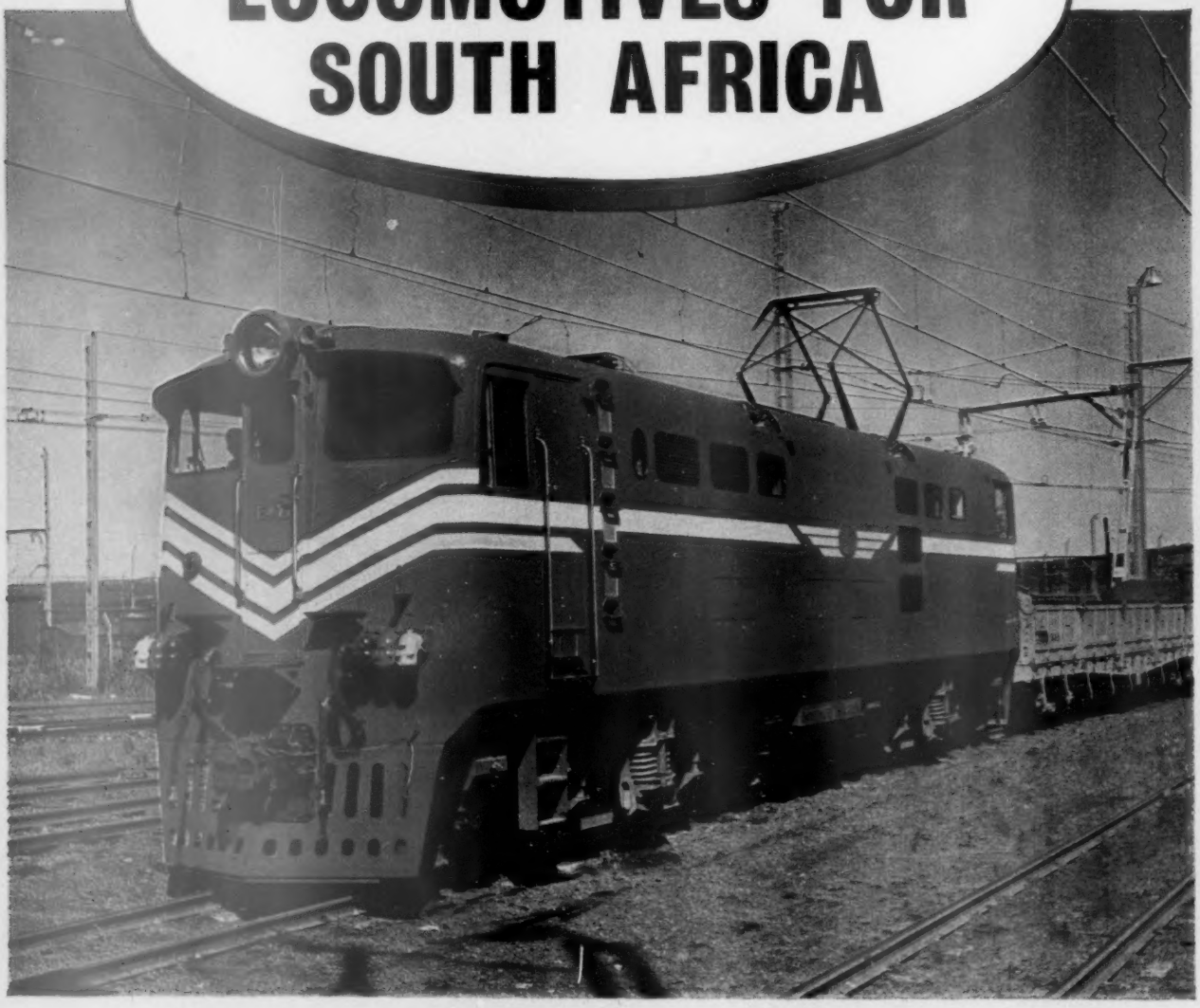

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